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ABSTRACT

This resource guide consists of career and technology awareness learning activities that are designed to be infused into the basic skills curricula in elementary classrooms. Sets of activities are provided for each grade from kindergarten through grade 6. The sections for each individual grade level contain a list of objectives for that particular grade, activity sheets (each of which contains an instructional objective, list of needed learning center equipment and materials needed, a list of suggested resources, and a step-by-step plan for conducting the activity), and a series of worksheets. Because the intent of the guide is to increase students' technology and career awareness while at the same time enhancing basic skills, many of the activities revolve around basic reading, writing, mathematics, vocabulary, storytelling, art, science, and social studies skills. (MN)

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CAREER AND TECHNOLOGY

AWARENESS

AN ELEMENTARY CURRICULUM RESOURCE GUIDE

Prepared

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Career and Technology Awareness

> "Career development will help individuals acquire and utilize the knowledge, skills and attitudes necessary for each to make work a meaningful, productive and satisfying part of his/her way of living." (Hoyt)

The Career and Technology Awareness resource guide activities were developed to be infused into the present K-6 curriculum. These activities will enhance the learning of basic skills by giving the student the opportunity to apply these skills to interesting and challenging experiences.

Each grade level is represented by a different color of paper and the worksheets in each section are white to facilitate photocopying.

Kindergarten	--	Lt. Blue
First Grade	--	Lavender
Second Grade	--	Lt. Orange
Third Grade	--	Yellow
Fourth Grade	--	Lt. Brown
Fifth Grade	--	Lt. Green
Sixth Grade	--	Pale Grey
Resources	--	Ivory

It is presumed that the activities in this curriculum resource guide will encourage teachers to utilize their interests and creativity to develop additional experiences which would be unique to their setting.

KINDERGARTEN

Kindergarten Instructional Objectives

The general outcomes of learning experiences in kindergarten are defined by the following kindergarten objectives adopted by the State Board of Education, June 8, 1979.

1. The student performs tasks involving gross motor skills.
2. The student performs tasks involving fine motor skills.
3. The student remembers visual stimuli.
4. The student determines likenesses and differences in visual stimuli.
5. The student remembers auditory stimuli.
6. The student determines likenesses and differences in auditory stimuli.
7. The student communicates with others by using expressive language.
8. The student is receptive of language in communicating with others.
9. The student expresses an interest in language.
10. The student classifies stimuli on the basis of one or more attributes.
11. The student compares stimuli on the basis of one or more attributes.
12. The student sequences stimuli on the basis of one or more attributes.
13. The student begins to understand the concept of conservation of numbers.
14. The student interprets and infers on the basis of oral or illustrative selections.
15. The student controls emotions and expresses them in a socially acceptable manner.
16. The student displays a positive attitude toward self.
17. The student displays a positive attitude toward school.
18. The student interacts with others in a socially accepted manner.

LEARNING CENTER

INSTRUCTIONAL OBJECTIVE

Students will begin an individual Career Development Record indicating their changing interests as well as personal growth in attitudes, aptitudes and achievements.

RESOURCES

MATERIALS

Photo copy: Career Development Record for each student.

ACTIVITY

The Career Development Record is a history of individual students career aspirations including their aptitudes, interests, attitudes and achievements.

Grade K will be the initial activity. The assessment, to be effective, should be continued in grades 2, 4, and 6.

It will be necessary for the teachers' aide or counselor to fill in the record at levels K-3.

The Career Development Record could be used by teachers and counselors to better understand the aspirations of their students K-12.

The teachers' judgement will be relied upon as to what time during the school year this assessment should be completed.

CAREER DEVELOPMENT RECORD

_____
Student's Name

GRADE K DATE:

High Interest Learning Center

_____

Low Interest Learning Center

_____

Prefers Activities:

Outside_____Inside_____Both_____

Physically:

Active_____Average_____Sedentary_____

Achievements(s)

_____

_____

Hobby/Interests(s)

_____

_____

Wants to be a: _____

Comments:

_____

_____

LEARNING CENTER

Language Arts

TYPE
Small Group

INSTRUCTIONAL OBJECTIVE

7, 10, 14.

Students will recognize careers as being related to a product or service.

RESOURCES

Professional Magazines-Home Builder, Farm, etc.

Newspaper.

MATERIALS

Pictures from Magazines, Tag Board, Paste or Glue, Stick Pins or Tape, Brown wrapping paper for display board or bulletin board, colored paper for letters or felt tip pen.

RELATED CAREERS

Products-Manufacturing Cars, T.V., etc., Dress Maker, Farmer, Houses, Services-Police, Bus Driver, Dry Cleaner, Teacher, Pilot.

CAREER GROUP

Product
Service

ACTIVITY

Make a display board - Divide into halves.

One side - Product Careers the other Service Careers.

Procedure:

The teacher will introduce the concept of product and service careers: 1) Give examples: Baker-Bread-Product, Doctor-Healing-Service, Teacher-Learning-Service, Engineer-Design-Product.

The teacher will present a variety of career pictures, cut from magazines. Tell what each person is doing on their job and if it is a product career or service career.

Cut out pictures from magazines depicting careers representing each group.

Paste pictures on cards.

Using stick pins or tape have each child place a picture under the correct heading - product or service career.

FOLLOW-UP ACTIVITY

* Invite persons from the community representing careers depicted from activity to make a presentation.
* Children could bring from home magazine pictures of people performing jobs and add to career bulletin board. Indicate if it is a service or product.
* Children should all bring to class a product 1) Give name of product. 2) Who made the product. 3) How it is used.

TEACHER'S NOTES

LEARNING CENTER

Career Center

INSTRUCTIONAL OBJECTIVE

#4, 10, 11.

Children will be able to distinguish service careers from product careers.

RESOURCES

MATERIALS

Paper-Colored, Cut 10 Large Circles 24" in Diameter, Felt Tip Pen.

RELATED CAREERS

All careers.

NEW WORDS

Service
Product
Career

CAREER GROUPS

Service
Product

ACTIVITY

Discuss:

Careers are divided into 2 groups: Service and Products

Service - Contributes to the welfare of others/useful work that does not produce a tangible commodity.
Product - Make and grow things for people to use and/or eat.

Place career pictures on circles. Police, Artist, Teacher, Farmer, House Builder, Nurse, Pilot, Ice Cream Maker, Race Car Driver, Bicycle Maker, Computer Programmer, Laser Technician, etc.

Place circles around the room on the floor.

Have children go to circle of the career that interests them the most.

Which career has attracted the most children?
Which career has attracted the most boys?
Which career has attracted the most girls?
Which career has attracted the least number of children?

Ask the children to decide if the career circle they have chosen is a service or product career.

FOLLOW-UP ACTIVITY

* Have children ask a relative what their job title is and what some of their tasks are. Have children relate to the class what they learned about the job.

* Ask class to tell if this job is a service job or a product job.

TEACHER'S NOTES

Use career pictures that will expand the childs knowledge of career options. Try not to use pictures of only Doctors, Nurses, Firemen, etc.

LEARNING CENTER

Cooking Center
Manipulative Center
Woodworking Center

INSTRUCTIONAL OBJECTIVES

#1, 2, 8.

The student will be able to describe how a product is mass produced.

RESOURCES

Yellow Pages of Telephone Book
Manufacturing.

MATERIALS

Paper, Markers and other materials for a product.

NEW WORDS

Industry
Product
Production
Design

CAREER GROUP

Product

ACTIVITY

The teacher will discuss the concept of production where parts are produced and brought together to make one item. Show examples of an object that is made up of many different parts, (eg. various toys.).

Set up an assembly line to produce a product (cookies, greeting cards, christmas ornaments, etc.). Assign each child a specific job, emphasizing that each job must be done correctly and everyone should work together. Enough products should be made so that each person in the class can have one to take home.

FOLLOW-UP ACTIVITY

* Find out names of local manufacturing companies and discuss what products they produce.
* Have students find out if they know anyone who works in a manufacturing company. What is their job and what do they manufacture.
* Discuss other workers involved in manufacturing a product - engineers who design products, salesmen who sell products, and artists who create packaging design, truck drivers who deliver products.

TEACHER'S NOTES

LEARNING CENTER

Art

INSTRUCTIONAL OBJECTIVE

Learning Outcomes 12-14-18.

Career Awareness.

RESOURCES

Balloons Over Charlotte (704) 365-0480.

Carolina Balloon Promotions (803) 738-0124.

Yellow Pages Telephone Book-Balloon.

Palmetto Balloon Classic Festival-May, Camden, S.C.

Chamber of Commerce Greenville, S.C. Freedom Weekend Aloft-July 4.

MATERIALS

Construction Paper, Yarn, Samples of Wall Paper, Crayons, Pictures of Hot Air Balloons.

RELATED CAREERS

Hot Air Balloonist
Aerial Photographer
Communication
Advertising Blimp Pilot
Balloon Maker
Military
Catering&Party Services

ACTIVITY

Teacher prepares a classroom worker bulletin board using replicas of hot air balloons made out of construction paper.

Make Balloons - Teacher may want to do the balloon making activity in the art center. (Use worksheet - Balloon)

Have the entire class look at pictures and worksheet of hot air balloons. Design and construct a balloon using wall paper or childs own design.

Construct a woven basket using strips of construction paper and attach to the balloon using yarn or string. On each basket, glue worker Task Cards (Water plants, straighten learning center, etc.)

Have children make cut outs of themselves. Color face, hair. Place cut out in basket when child is working at an assigned task.

Schedule each child to have a job as a classroom worker.

Move balloons up as child completes the tasks. Extra high if they excell in their assigned task.

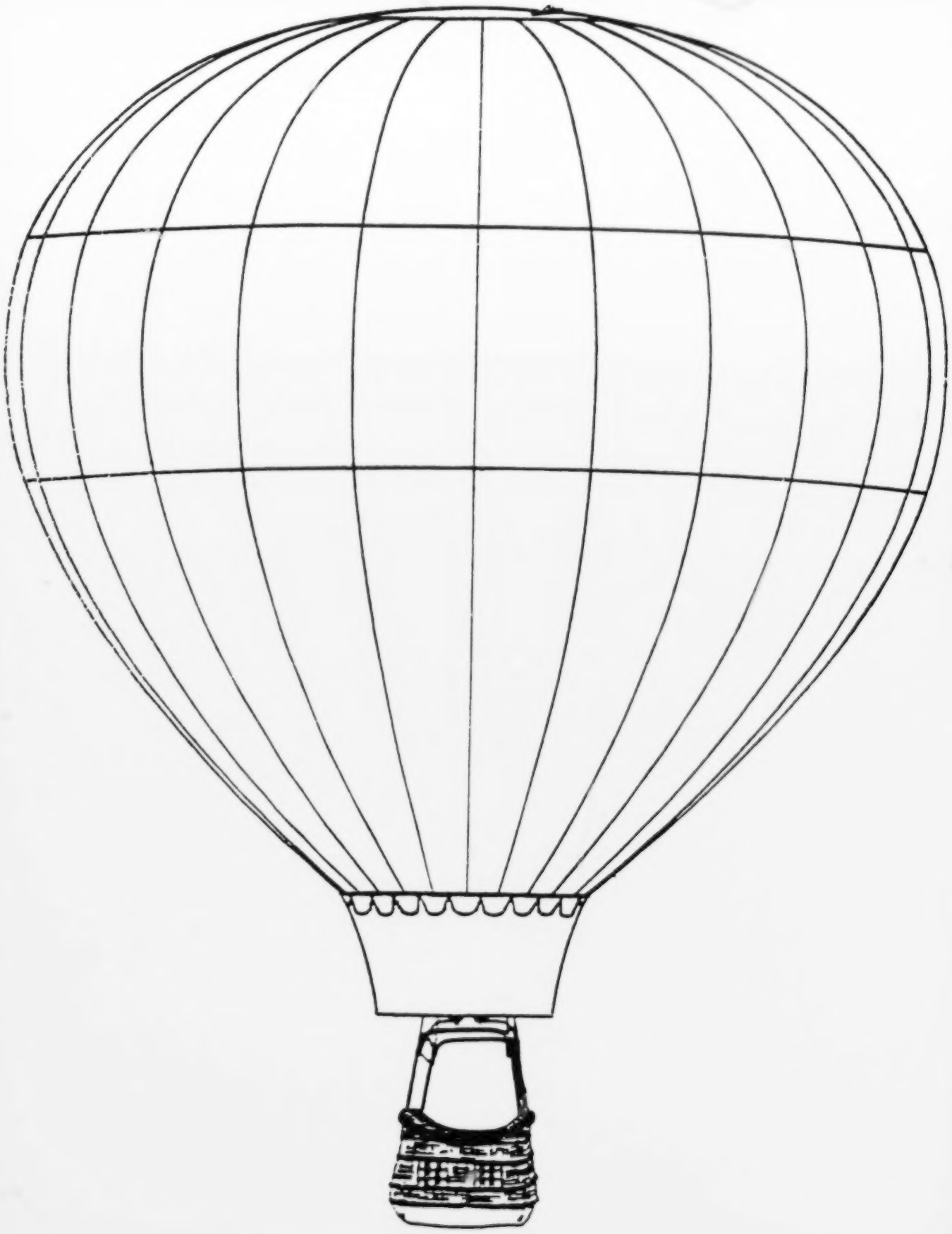
FOLLOW-UP ACTIVITY

* Have a balloonist visit the class. Have a aerial photographer visit the class.
* Discuss the difference between leisure and work. Some balloonists do this for hobby/fun. Some balloonists do this for pay.

TEACHER'S NOTES

Teacher can expand this idea into other areas of achievement - PTA memberships, attendance, etc.

BALLOON



LEARNING CENTER

Science

TYPE

Entire Class

INSTRUCTIONAL OBJECTIVES

#2, 5.

RESOURCES

Local Crop Farm.

Vocational Education Center Ag. Production Class.

Cooperative Extension Service located in your county.

MATERIALS

Crop Farm, Roasted Peanuts in Shell, Peanut Oil, Blender, Container for Peanut Butter, Crackers.

RELATED CAREERS

Farm Machinery Mechanic, Crop Farmer, Agronomist, Plant Pathologist, Crop Duster.

NEW WORDS

Scavenger
Fertilize
Cultivate
Technology

CAREER GROUP

Product

ACTIVITY

Field Trip to a Local Crop Farm (Cotten, Peanut, Soy Bean, Peach, Corn). Tell students that to cultivate a crop. The following steps are necessary.

1. Decide what crop(s) will be grown.
2. Plot out space for field.
3. Buy plants or seeds.
4. Prepare ground.
5. Plant seeds.
6. Water and fertilize.
7. Control insects, diseases and scavengers.
8. Thin and weed.
9. Harvest, eat, can, freeze and sell.

Make 3 columns on the chalk board. Head each column - TREES - BUSHES - UNDERGROUND. Have children come back and use what they have seen by matching pictures of products with where they are grown: Cotton, Peanut, Soy Bean, Peaches. Ask children where other vegetables and fruits grow.

Invite Senior Vocational Student to make a presentation concerning:

Cotton Production - During Sept-Oct, bring a cotton plant to class and have student tell how it is planted, cultivated, and harvested. Tell what products are derived from cotton plants.

Peanut Production - During Sept-Oct-Nov, bring a peanut plant to class, tell how it is planted, cultivated, and harvested. Tell what products are derived from peanut plants.

Invite Cooperative Extension Service agent to tell more about other crop growers in in your area. Have them tell how technology has changed: Harvesting of cotton, peanuts, processing of cotton, peanuts and the uses of cotton and peanuts.

FOLLOW-UP ACTIVITIES

* Making Peanut Butter - Put 1 cup full of shelled peanuts in blender, add 4 teaspoons peanut oil, puree' in blender until really smooth, spread on crackers for each child.

* Each student plants flower seeds from a variety of plants, in small pots and watches them grow.

TEACHER'S NOTES

LEARNING CENTER

Cooking

INSTRUCTIONAL OBJECTIVES

Children will make cake decorations using Royal Glaze.

#2.

RESOURCES

Vocational/Career Center Food Service Instructor.

Grocery
Cake Decorator.

MATERIALS

Cardboard-lightweight
Decorating Bag and Design Tip, Vegetable Color Set, Confectioners-Sugar, Egg Whites, Lemon, Glycerin, Small Candles.

RELATED CAREERS

Caterer
Cake Decorator

NEW WORDS

CAREER GROUP

Product

ACTIVITY

Make icing mixture according to the following directions:

Royal Glaze - This icing will become very hard. To avoid the naturally grayish tone that develops during preparation, add to portions that you want to keep white a slight amount of blue vegetable coloring. Do not use blue in any icing that you plan to color yellow, orange or any other pale, warm tint.
Sift: 3½ cups confectioners' sugar, Beat until stiff, but not dry: 2 egg whites, Gradually add the sifted sugar and: Juice of one lemon, 1 to 2 drops glycerin until it is of a good consistency to spread. Cover with a damp cloth until ready to use. Should you want the icing stiffer, add a little more sifted sugar. To make it softer, thin it very, very gradually with lemon juice, more egg white or water.

Fill decorator bag with icing and affix a star decorator tip.

a. After forming a star approximately ½" high, press a small candle firmly into the star - remove and let icing harden. This will make a small candle holder.

FOLLOW-UP ACTIVITY

* Let students create their own designs on a cardboard cut to simulate the top of a cake.

a. Cardboard may also be cut into various shapes - animals, monsters, rockets, cars, etc.,

TEACHER'S NOTES

Invite a cake decorator from a store or student(s) from the vocational center to assist.

LEARNING CENTER

Block Center

INSTRUCTIONAL OBJECTIVES

The student will expand their knowledge of transportation careers.

#7, 14.

RESOURCES

Telephone Directory
Newspaper
Magazines

MATERIALS

Toys from home.

RELATED CAREERS

Truck Driver
Cab Driver
Pilot
Bus Driver
Train Engineer

NEW WORDS

Automobile
Vehicles
Scoop
Scrape

CAREER GROUP

Service

ACTIVITY

Ask students in class to bring a favorite toy from home that replicates one used for transportation (car, train, plane) or work (trucks, tractor, etc.)

Gather a variety of toys and discuss the various jobs they represent. Each child could possibly describe his or her own toy(s).

As each toy is described, group according to the type of work they do. (Scoop, scrape, dig, carry goods, carry people, etc.). Talk about the design of each vehicle and why it is built the way it is for a particular job. Tell students what skills the operator of each vehicle might need to perform his or her job.

FOLLOW-UP ACTIVITY

* List and discuss other types of vehicles that may not have been covered in class.
* Construct a model city, using toys throughout, showing the many methods of transportation used.
* Ask each child to draw and color a vehicle that they would like to operate.
* Develop a bulletin board on "transportation" from magazine pictures brought to class by students.

TEACHER'S NOTES

LEARNING CENTER

Language Arts

INSTRUCTIONAL OBJECTIVE

Student remembers visual stimuli.

Student remembers oral stimuli.

RESOURCES

Southern Bell Telephone Co., Public Relations Office will provide 2 telephone hook ups and speaker.

MATERIALS

Activity Worksheet (Make Transparency)
Activity Worksheet (One for each student)

RELATED OCCUPATIONS

Communications Media Specialist
Telephone Operator
Emergency Medical Tech.

CAREER GROUP

Service

ACTIVITY

Give each student a copy of worksheet - Telephone.

Using overhead projector, fill in numbers on telephone buttons.

Emphasize Button -
Used for Emergency - 0

Emphasize Emergency -
Number - 911
(In some areas - Charleston, Columbia, Greenville)

FOLLOW-UP ACTIVITY

- Using a disconnected telephone, have each child practice dialing their home telephone number.
- Ask each child to find the "emergency" button.
- Ask each child to dial the "emergency" number - 911.
- Teach them to say:

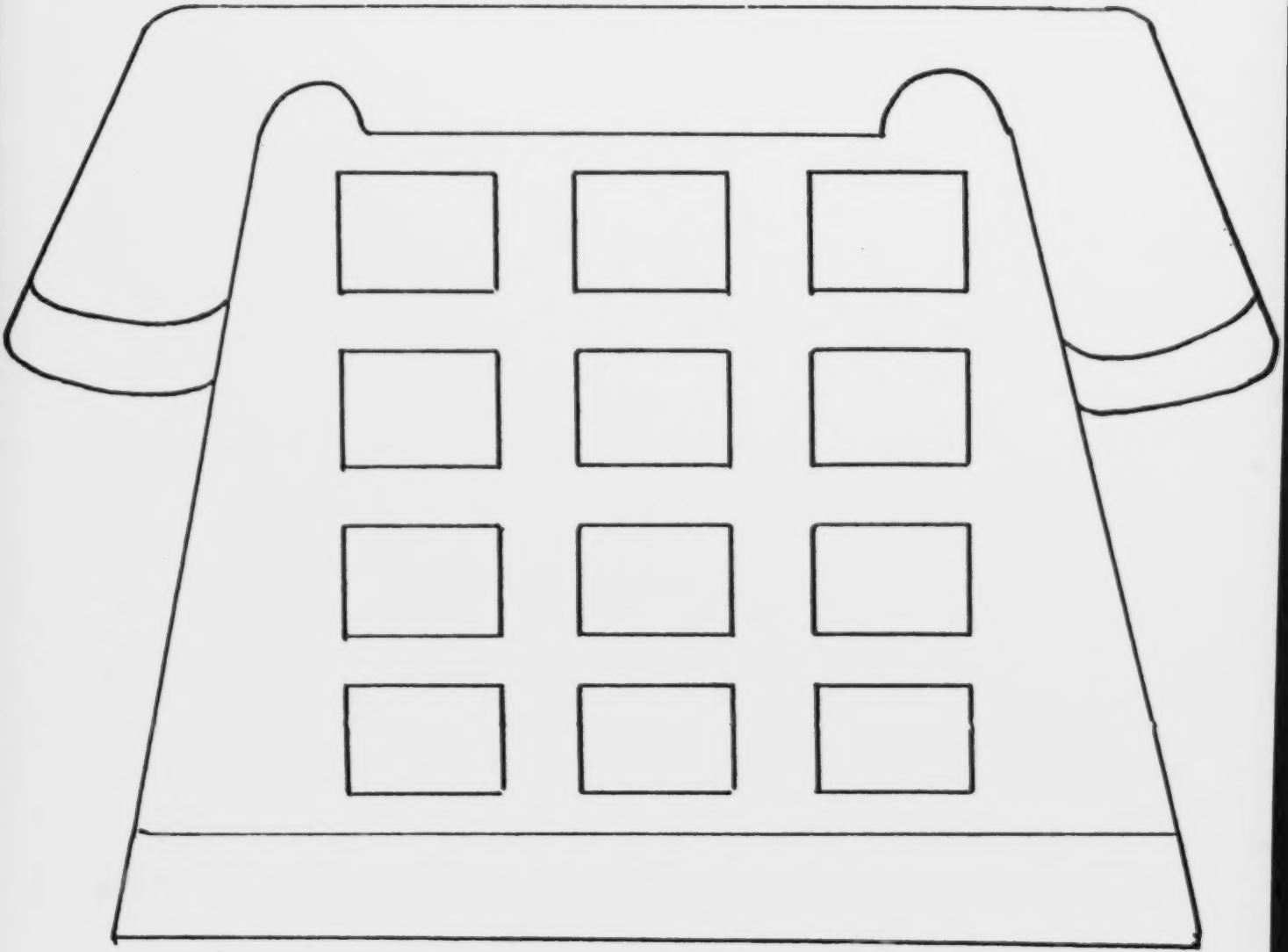
1. Their name.
2. Their address.
3. What emergency exists.

TEACHER'S NOTES

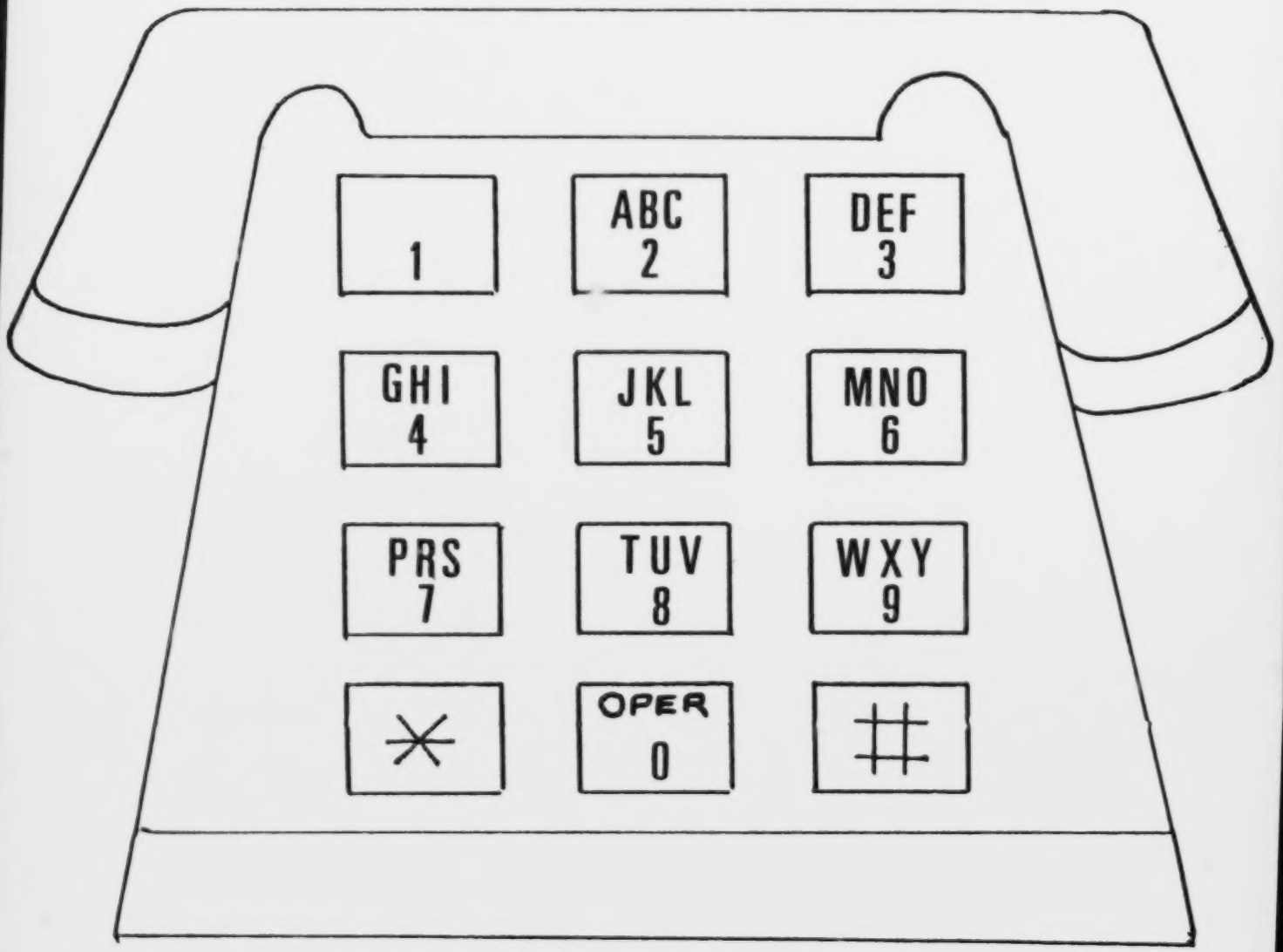
Stress use of telephone at this level for emergency situations.
(900 numbers are used for advertising and entertainment for a charge.)

Teacher may want to draw a rotary dial telephone on another worksheet.

HOW WE USE THE TELEPHONE



HOW WE USE THE TELEPHONE



LEARNING CENTER

Career Center

INSTRUCTIONAL OBJECTIVE

#14, 6.

Students will be able to distinguish work and leisure activities.

RESOURCES

Local recreational centers - country club, speedway, stables.

MATERIALS

Pictures from magazines.

RELATED CAREERS

Professional Athlete
Hospitality and Recreation

NEW WORDS

Leisure
Athlete
Recreation
Professional

CAREER GROUP

Service

ACTIVITY

Discuss with group the difference between work and leisure.

Work - the labor, task or duty that is one's means of livelihood.
Leisure - time free from tasks or duties.

Make a bulletin board with the words WORK and LEISURE heading separate columns.

Have children place cut out pictures of people playing and working. Place in the appropriate column.

Explain to class that some peoples' work is doing leisure type activities. They are called Sports Professionals.

Football-Fishing-Tennis-Baseball-Hunting-Golf-Riding Horses.

FOLLOW-UP ACTIVITIES

* Have a professional athlete come to class or a person whose job is doing leisure type activities. (Check local country club - golfer/speedway-race driver/stable-jockey).

* Ask children to tell about th[illegible] leisure time activities. Then ask what activity at home is considered work.

TEACHER'S NOTES

FIRST GRADE

SUBJECT(s)

Mathematics
Social Studies

TYPE

Entire Class
Small Class

CLASS TIME

110 minutes

INSTRUCTIONAL OBJECTIVE

Students will measure lengths of wood.

Students will identify tools used by carpenters.

RESOURCES

Vocational Education Center, Building Construction Class-Tool Kit.

Worksheet-Construction.

MATERIALS

Tool Box-Hammer, Nails, Tape Measure, Plane, Try Square, Hand Saw, Hard Hat, Safety Glasses. Pieces of wood.

RELATED CAREERS

Cabinet Making
Building Construction
Furniture Making

NEW WORDS

Carpenter
Construction
Skill
Plane

ACTIVITY

Measurement: Begin by telling children that we all need a shelter to keep us warm and safe. Early man lived in caves -- What are other kinds of shelters have people lived in? (Tents, Castles, Huts, Igloos, Apartments, House Boats, TeePee, Mobile Homes, etc.)

Who builds our houses? (Carpenters.)

What is one important skill they must have? (Ability to measure accurately.)

What are some tools they use to measure? (Tape measure, try square.)

On worksheet - Construction:

1. Which item(s) are used to measure?
2. Which item(s) are safety items?
3. Which item(s) are wood working tools?

Take turns using the tools:

1. Hammer nail into wood - must wear safety glasses and hard hat.
2. Place 4 pieces of wood at right angles using a try square.
3. Measure - 6 pieces of wood and record length.
4. Smooth wood using plane.
5. Saw wood using saw.

Invite a retired carpenter(s) to class to assist.

FOLLOW-UP ACTIVITY

* Invite Building Construction student(s) to demonstrate other tools and skills used building houses.

* Take students to vocational/career center to observe students building a house.

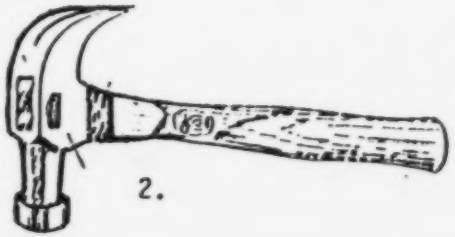
  a. Let students hammer and do other tasks with vocational students.

TEACHER'S NOTES

Students should have completed a unit on measurement in their math class before doing this activity.

1.

Construction

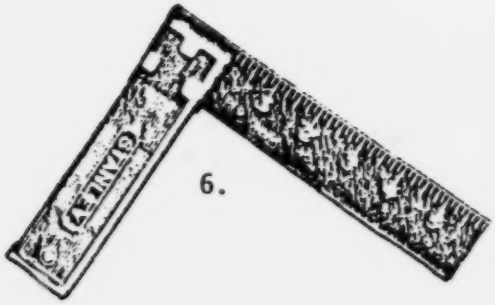


2.

3.

4.

5.



6.

7.

SUBJECT(s)

Language Arts
Art

TYPE

Group

INSTRUCTIONAL OBJECTIVE

Students will relate some tasks people are responsible for in various careers.

RESOURCES

Magazines.

Worksheet-
Finger Forms.

MATERIALS

Pictures of People Working, Finger Form Worksheet, Crayons, Sissors.

RELATED CAREERS

NEW WORDS

Career

ACTIVITY

Teacher will introduce students to a variety of careers by showing pictures of people working.

Ask the students to: 1) Name the occupation, 2) What are some tasks the persons do at at work, 3) Is special clothing worn, 4) Do they work mostly inside or outside, 5) How do we depend on the work they do, and, 6) Do the persons who do this work provide a service Allor product.

Let children tell everything they know about this career.

Teacher should be ready to expand upon children's knowledge.

FOLLOW-UP ACTIVITY

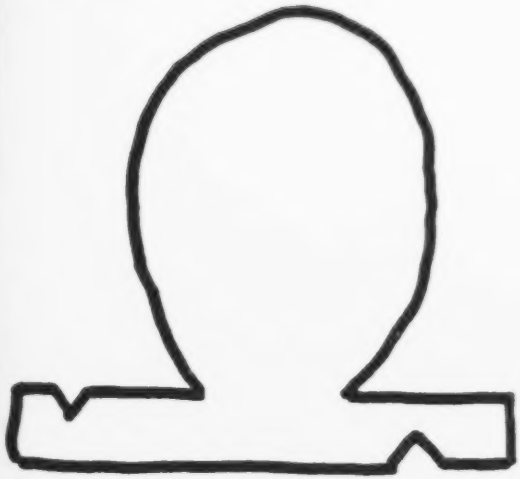
* Using the worksheet, Finger Forms, let each child cut out a finger form.

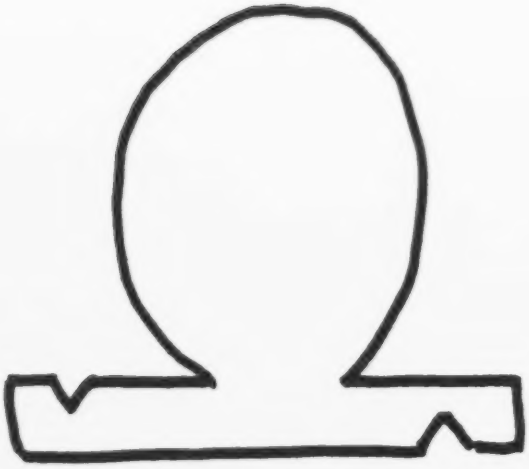
1. Cut out a picture of a person working so that it will fit the finger form.
2. Cut out the finger form.
3. Cut a short notch in each end of finger form.
4. Paste career picture to finger form.
5. Wrap finger piece around the finger and lock with notches.

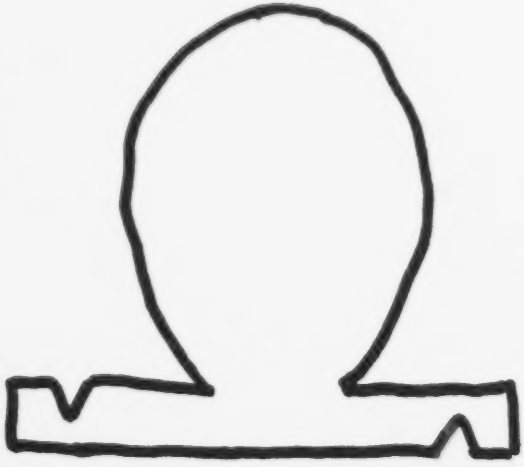
* Have each child tell about the career they have pasted on the form.

TEACHER'S NOTES

FINGER FORMS







SUBJECT(s)

Science

TYPE

Group

INSTRUCTIONAL OBJECTIVE

Students will employ the sun's rays to prepare a snack.

RESOURCES

Community Solar Panel Business.

MATERIALS

Large Glass Container, with cap, Tea Bags, Tile 6" or more, eggs, and foil.

RELATED CAREERS

Solar Heat

NEW WORDS

ACTIVITY

Teacher will demonstrate how solar energy can help prepare food.

1. Fill jar with water.
2. Place tea bags in water.
3. Set jar and tea bag in direct sunlight.
4. Keep jar in sunlight until the tea is made.

Place tile in direct sunlight.

1. When very warm, carefully place raw egg on tile.
2. Make a "cuff" around tile using foil so the egg does not slip off.

Name other ways you think solar energy could be used?

FOLLOW-UP ACTIVITY

* Invite person who sells and installs solar panels to visit the class.

SUBJECT(s)

Mathematics

TYPE

CLASS TIME

INSTRUCTIONAL OBJECTIVE

Students will measure items and will relate these to measurement used in careers.

RESOURCES

MATERIALS

Construction Paper, Cut out 10-20 footprints (see worksheet), container for footprints, Unifix cubes, blocks, and scales.

RELATED CAREERS

Construction
Health
Recreation
Shoe Manufacturing

NEW WORDS

Altimeter
Digit

ACTIVITY

Discuss various early means of measurement using body parts:

Digit = 1" - the first joint of the index finger
Foot = 12" - length of a foot
Hand = 4" -width of hand, excluding thumb
Yards = 36" - length between nose and tips of fingers

What careers use the following measuring devices: cups, yard measure, scales, thermometer, altimeter, speedometer, clock.

(cups-bakery, yard measurer-football linesman, scales-grocery, thermometer-weather forecasting, altimeter-aviation, speedometer-racing).

Using blocks, build a tower. Use worksheet of foot to measure the height of the tower.

a. How many feet tall is the tower.
b. How many inches tall is the tower.

Using unifix cubes, have students measure the items on worksheet of tools.

1. How many cubes long is the item?
2. Which item is the longest?

Bring health room scales to room - Let students record the names of students and their weight.

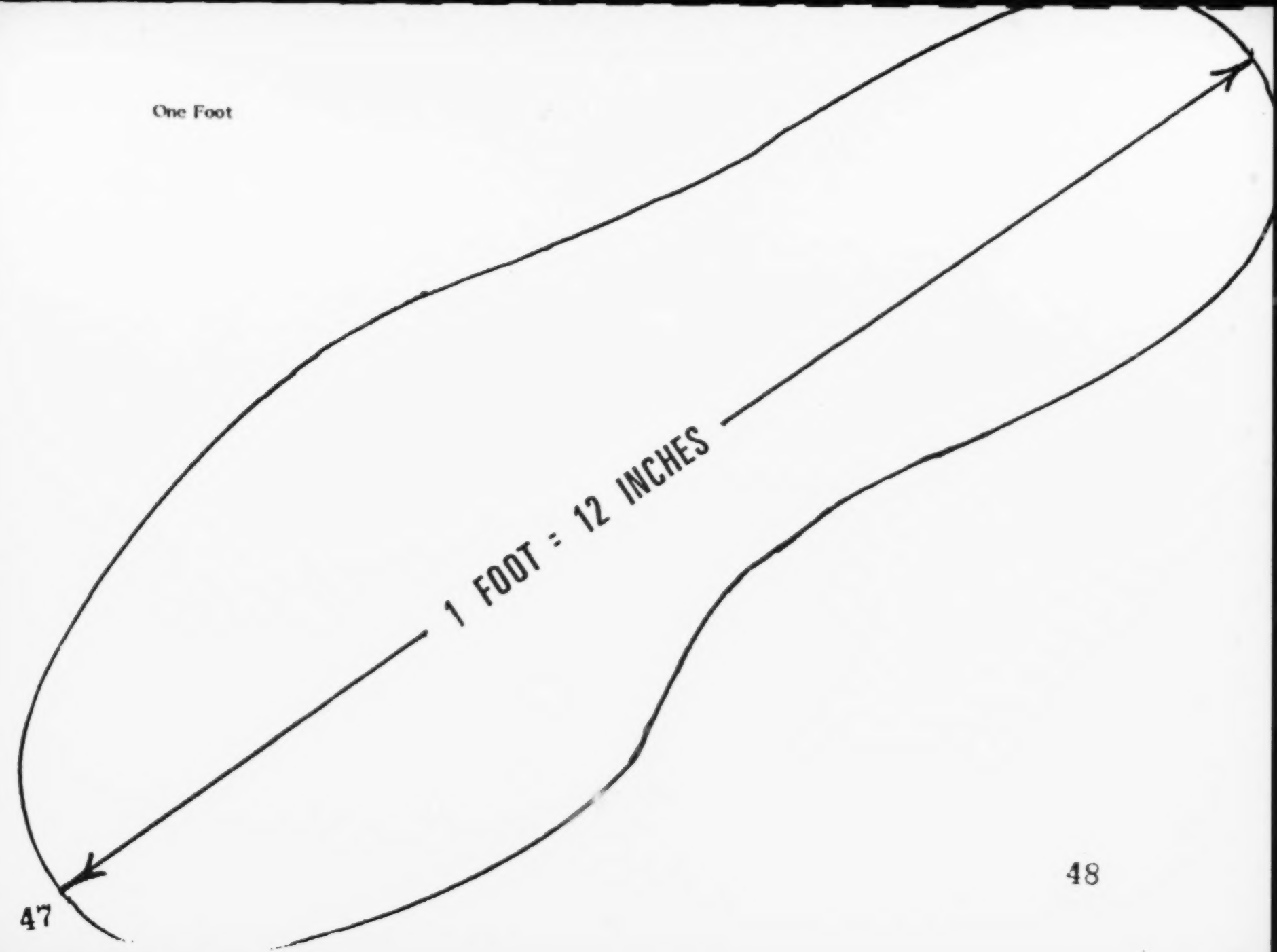
FOLLOW-UP ACTIVITY

* Have children measure things with their feet, hands and fingers, i.e., size of room, distance to door, pencil.

* Weigh students again - Did some gain weight or lose weight.

TEACHER'S NOTES

One Foot



SUBJECT(s)

Art

INSTRUCTIONAL OBJECTIVE

Student will prepare a silhouette by using the sun's rays.

RESOURCES

Vocational/Career Center-Graphic Communications Instructor/Students

MATERIALS

Black Paper, Sissors, white paper.

RELATED CAREERS

Tanning Salon
Photography
Solar Heat

NEW WORDS

Silhouette
Solar

ACTIVITY

The suns rays affect our lives in many ways. Solar energy can: change our skin color, heat our homes and propel spacecraft (see "solar sail" Websters Ninth New Collegiate Dictionary-1983). We are going to make a silhouette of a drawing using the suns rays.

a. Students will draw an animal or trace the outline of an object on on white paper.
b. Students will then cut out the object
c. Place the white paper with the form cut out on the same size black paper. Make sure it is securely attached.
d. Place the paper in strong sunlight for three-four days.
e. Remove white paper and a silhouette of the child's drawing will be on the black paper.

Colored paper of a dark hue can also be used.

FOLLOW-UP ACTIVITY

* Ask graphic communications teacher or student to make a presentation showing how photographs are processed (Black & White, Color).

TEACHER'S NOTES

SUBJECT(s)

Language Arts
Art

TYPE

CLASS TIME

55 Minutes

INSTRUCTIONAL OBJECTIVE

Students will relate the duties and tasks of a Forest Ranger.

RESOURCES

Ninety Six, National Historic Site (Revolutionary War) Ninety Six, S.C.

South Carolina State Parks
1205 Pendleton St.
Columbia, SC 29201

S.C. State Dept. of Education, Dr. Susan Smith. (Free)

"Ranger Rick Series."

Vocational/Career Center-Forestry Instructor.

MATERIALS

RELATED CAREERS

Environment
Forester
Turf Farmer

NEW WORDS

Agribusiness and Natural Resources

ACTIVITY

Forest Rangers - manage and develop forest lands for economic and recreational purposes. Maps forest areas and plans cutting and planting programs to assure continuous production of timber. Plans campsites and recreation centers and directs construction of cabins. Watches for forest fires and conducts fire prevention programs.

Make a list of a forest rangers duties and have students draw a picture of the ranger working at one of the duties on the list.

What interests should you have if you want to be a Forest Ranger? (Work Outside, Help People, Camping)

FOLLOW-UP ACTIVITY

* Have a ranger visit the class from a State Park.
* Invite a student from a Forestry class at the vocational center to come demonstrate an activity.

TEACHER'S NOTES

Refer to "Resources" for address & telephone numbers.

SUBJECT(s)

Language Arts
Social Studies

TYPE

CLASS TIME

165 minutes

INSTRUCTIONAL OBJECTIVE

Students will name 3 careers related to museums or zoos.

Students will prepare a diorama.

RESOURCES

S.C. Museums and Related Organizations 1986 Directory.

S.C. State Museum
P. O. Box 100107
Columbia, SC
29201-3107
Attn. - Margaret Anne Lane.

MATERIALS

Modeling Clay, Sticks, Cardboard, Crayons/Paint, and other materials for dioramas.

RELATED CAREERS

NEW WORDS

Curator
Docent
Archaeologist
Diorama
Terrestrial
Carniverous
herbivorous
endangered
extinct
species

ACTIVITY

A museum of Natural History has objects on display that give us information about animals and plants that lived long ago.

Three careers at the museum are:

1. Curator - A person in charge of a museum or zoo.
2. Docent - a person who conducts groups through museums.
3. Archaeologist - a person who studies artifacts of past human life.

What objects might we dig from the earth that would tell us about our past. (Arrowheads, Bones, Rocks, Pottery).

Dinosaurs lived long ago on an earth that was very different than it appears today. Make a diorama of how you think the earth appeared when dinosaurs lived.

a. Make models of dinosaurs - 1) Terrestrial Reptiles; 2) Carniverous Reptiles; and 3) Herbivorous Reptiles.
b. Make models of early man.

Dinosaurs became extinct. Some animals, reptiles and other living things are endangered of becoming extinct. What animals in our state are considered an "endangered species" (Bald Eagle, Alligator, etc.).

FOLLOW-UP ACTIVITY

* Have a curator visit the class and tell about their career and other jobs at museums or zoos.

TEACHER'S NOTES

SUBJECT(s)

Language Arts
Social Studies

TYPE

Whole Class

CLASS TIME

110 Minutes

INSTRUCTIONAL OBJECTIVE

The student will be able to describe job titles and responsibilities of those who work at the fire station.

RESOURCES

Worksheet-
Who's Who at the Fire Station.

MATERIALS

Paper, Pencil,
Camera, Film.

RELATED CAREERS

Fireman
Ladderman
Hoseman

CAREER CLUSTER

Public Service

ACTIVITY

Take students on a field trip to a fire station. Take a tour of the fire station and introduce children to the workers. Before going, have students make "I'M HERE TO HELP YOU" badges for each fireman.

Assign students to interview the fire station workers with questions they had developed before the field trip.

Take snapshots of the workers and present the workers with the badges the children have made.

FOLLOW-UP ACTIVITY

* Have students organize responses from the interview into a brief story about each fireman's responsibilities.
* Students may be evaluated by using the worksheet "Who's Who At The Fire Station?"
* Display findings and snapshots on a large bulletin board in the shape or outline of the fire station.

TEACHER'S NOTES

This activity sheet can be adapted for use on other field trips - i.e. -
Fast Food Business
Police Stations
Dry Cleaners
Grocery Store
Library
Restaurant

WHO'S WHO AT THE FIRE STATION ?

JOB	JOB SKILLS	JOB DUTIES
FIRE CHIEF		
LADDERMAN		
HOSEMAN		
TELEPHONE OPERATOR		

DIRECTION: There are many jobs in or around you community that require different job skills and job duties. Write the name of the person at the fire station who has that job and several of their Job Skills and Job Duties.

SECOND GRADE

SUBJECT(s)

Any Subject Area Deemed Appropriate

TYPE

Entire Class

CLASS TIME

One Period

INSTRUCTIONAL OBJECTIVE

Students will have an individual Career Development Record indicating changing career interests as well as personal growth in attitudes, aptitudes and achievements.

MATERIALS

Photo copy: Career Development for each student.

ACTIVITY

The Career Development Record is a history of individual student career aspirations including their aptitudes, interests, attitudes and achievements.

Grade K will be the initial activity. The assessment, to be effective should be continued in grades 2, 4, and 6.

It may be necessary for the teachers aide or counselor to fill in the record at level K-3.

The Career Development Record could be used by teachers and counselors to better understand the aspirations of their students K-12.

The teacher's judgement will be relied upon as to what time this assessment should be administered during the school year.

CAREER DEVELOPMENT RECORD

_____
Student's Name

GRADE 2 DATE:

High Interest Subject

_____
Low Interest Subject

_____
Prefers Activities:

Outside_____Inside_____Both_____

Physically:

Active_____Average_____Sedentary_____

Achievement(s)

_____
_____

Hobby/Interest(s)

_____
_____

Wants to be a: _____

Comments:

_____
_____

SUBJECT(s)

Social Studies
Language Arts

TYPE

Entire Class

CLASS TIME

110 minutes

INSTRUCTIONAL OBJECTIVE

Students will be able to locate various countries around the world. where toys are manufactured.

Students will invent a toy.

RESOURCES

Map of the World.

MATERIALS

Student's Favorite Toy
Map of the World
Variety of Materials (buttons, cloth, etc.)

RELATED CAREERS

Inventor
Manufacturing
Transporation
Toy Buyer
Toy Shop
Advertising (TV and other media)

NEW WORDS

CAREER GROUP

Manufacturing

ACTIVITY

Have each student bring in a favorite toy.

a. Let each child tell something about the toy.
b. Have each child examine the toy and tell where it was made and find the location on a map.
c. Ask class - How was the toy developed and how did it finally reach your house?

1) Inventors idea, 2) Draw a picture, 3) Manufactured, 4) Packaged, 5) Transported, 6) Marketed, and, 7) Bought.

Discuss how many different jobs/people are represented in creating this toy and bringing it to them. This could include how parents' jobs provide the means for purchasing the toy.

FOLLOW-UP ACTIVITY

- Ask children to invent a toy.

Step 1 - Idea
Step 2 - Drawing
Step 3 - Construct

Provide a variety of materials - cardboard, popsicle sticks, string, buttons, bits of material, etc.

TEACHER'S NOTES

SUBJECT(s)

Social Studies

TYPE

Entire Class

CLASS TIME

55 minutes

INSTRUCTIONAL OBJECTIVE

Students will describe careers that require a person to be outside/ inside most of the time.

RESOURCES

"The Man Who Took the Indoors Out."

MATERIALS

RELATED CAREERS

All Careers

NEW WORDS

ACTIVITY

Many careers can be divided into two groups, those that take place primarily inside or those that take place primarily outside.

Write inside and outside on chalkboard.

Have students name some jobs that people do: Inside and Outside.

Broaden students awareness by mentioning other careers: Robot Designer (I), Beekeeper(O), Truck Driver (O), Restaurant Owner (I), Doctors (I), Ranger (O).

Ask students which they prefer, being inside or outside.

List other careers and jobs under the correct heading (inside and outside).

FOLLOW-UP ACTIVITY

Inside - Outside

* Make up 2 teams consisting of 5 players each.

  One team represents outside workers and the other inside workers.

The game begins by the Outside Team player naming a career that requires a worker to be outside most of the time. Then the Inside Team must name a career that requires a worker to be inside most of the time.

Each team takes its turn.

If a team member cannot think of a career they must sit down.

Let all students play - keep the groups small. Have a championship.

TEACHER'S NOTES

SUBJECT(s)

Art
Language Arts

TYPE

Three Groups

CLASS TIME

110 minutes

INSTRUCTIONAL OBJECTIVE

The students will be able to describe careers related to Graphic Arts.

RESOURCES

Yellow Pages of Telephone Book. "Artists-Commercial"

Area Vocational Center-Graphic Communications Class.

MATERIALS

Paper, Crayons/Paints, 3 Short Stories or Poems, Illustrated Book.

RELATED CAREERS

Fashion Illustration
Commercial Artist
Calligraphy
Photography

NEW WORDS

Imagination
Illustrate

CAREER GROUP

Communications and Media

ACTIVITY

Have a favorite book to display to the class. Ask how many careers are responsible for us having the book? List on chalk board.

Logging	Writer	Illustrator
Paper Mill	Publisher	Sales Person
Ink Maker	Editor	Book Store Owner
Printer	Book Binder	. . . and others.
Copy Writer	Truck Driver	

Divide class into three groups "we are going to illustrate a story." Read three stories, one to each group. Tell students to draw a picture of their favorite character or event in the story.

Have students show & tell about what they have drawn.

Tell students that being an illustrator of books is an interesting career if:

. . . you like art,
. . . you can draw or paint well,
. . . you like to work inside,
. . . you have a good imagination.

FOLLOW-UP ACTIVITY

* Contact a Commercial Artist and have them come to the class to tell about his/her work.

* Contact the Graphic Communications/Commercial Art Teacher at a Vocational Center and have a senior student come to the class to demonstrate techniques learned in this course.

TEACHER'S NOTES

SUBJECT(s)

Science

TYPE

Entire Class

CLASS TIME

55 Minutes

INSTRUCTIONAL OBJECTIVE

The students will be able to identify careers related to food we get from the sea.

RESOURCES

Yellow Pages of Telephone Book- "Fish", "Aquarium".

Mr. Joe Logan,
Chief of Fisheries
S.C. Dept. of Wildlife
and Marine Resources
P. O. Box 167
Columbia, SC 29202.

MATERIALS

Pictures of Fish
Brochures from Wildlife & Marine Resources,
Paper-Scissors,
Worksheets.

RELATED CAREERS

Lobster Trapper
Fish Camp Operator
Ocean Mining
Underwater Archeology
Oceanographer

NEW WORDS

Aquaculturist
Aquarium
Pisces-Jan.21 - Feb. 18
(Sign of the Zodiac)
Refrigerated

ACTIVITY

Ask students if they can name things from the sea that we use for food. (Shrimp, Fish, Scallops, Oysters, Crabs, & Lobster).

Aquaculturist - a person who raises fish, etc., for food -

Shrimp Farmer	Trout Farmer
Catfish Farmer	Salmon Ranches
Crawfish Farmer	Perch Farmer

Have each student make a small truck. Using the worksheet, "From Sea To Market", see who can find their way to the grocery.

Photocopy worksheet - Fish - Let students do activity.

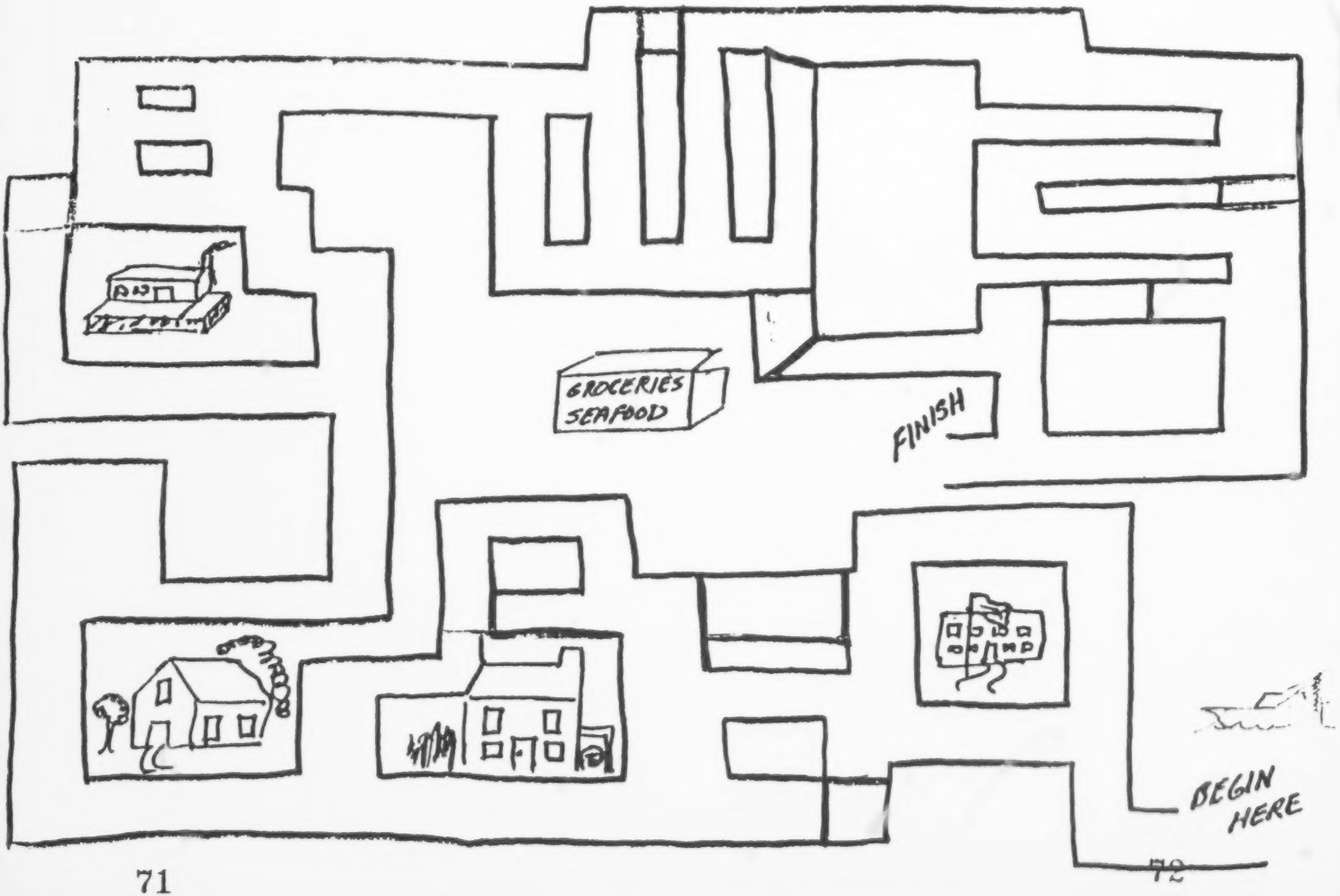
FOLLOW-UP ACTIVITY

* Ask children if their parents are involved in a job that deals with seafood. Invite parent to tell class about job.

* Contact Department of Wildlife and Marine Resources for materials and speakers.

TEACHER'S NOTES

FROM SEA TO MARKET



FISH

How many times can you find the word - fish?
Place a circle around the word - fish.

f	b	c	d	e	f
i	g	h	f	J	K
S	l	f	i	S	h
h	m	n	S	f	C
f	j	S	h	i	ω
P	g	f	r	S	t
W	f	i	S	h	V
f	i	S	h	y	z
X	S	h	a	b	c
d	h	e	f	g	h

SUBJECT(s)

Science
Language Arts

TYPE

Group

CLASS TIME

110 Minutes

INSTRUCTIONAL OBJECTIVE

Students will learn about some physical properties of salt water.

Students will become aware of several careers related to the oceans.

RESOURCES

Stores that sell salt water fish will have salt water for sale.

MATERIALS

Sea (Salt) Water, Glass Container, Microscope (Opt.), Slides.

RELATED CAREERS

Marine Biologist

NEW WORDS

Marine
Evaporate
Mineral
Saline

ACTIVITY

Collect sea-water in a glass container, pour into a large glass bowl.

Point out to students that sea-water has a high saline (salt) content. It also contains many other elements as well as bits and pieces of seaweed, marine animals and sand.

If a microscope is available, place a drop of sea water on a slide and allow children to look. (Compare a drop of fresh water).

Place container with sea water in a sunny window. Explain how the water will evaporate and leave crystals of salt.

If sea water is not available. Do the same activity only substitude ¼ cup salt and ½ cup water. Mix well.

FOLLOW-UP ACTIVITY

* Have children make collage of "Jobs of the Sea".
* Pick a career that looks interesting and find how much education is required.
* Have students describe a visit to the beach.

  What interesting things did they find on the beach?
  What jobs did they see people doing?
* Draw a picture of a person working on the beach.

TEACHER'S NOTES

SUBJECT(s)

Health

TYPE

Group

CLASS TIME

As Needed

INSTRUCTIONAL OBJECTIVE

Students will be able to tell some facts about chickens and eggs.

RESOURCES

Yellow Pages of the Telephone Directory -"Poultry", "Eggs".

Clemson Extension Service.

MATERIALS

RELATED CAREERS

Agri-Business
Poultry Farmer
Egg Farmer

NEW WORDS

Poultry
Vitamins

ACTIVITY

Discuss with the class the following interesting facts about poultry.

-Three breeds of chickens are used to produce eggs for general consumption: Leghorn, Plymouth Rock, Rhode Island Red.

-Each chicken lays approximately 245 eggs each year.

-Eggs are very high in protein and are easily digested.

-All breeds of chickens lay brown eggs, except those which originated in countries around the Mediterranean Sea. - Leghorn is the breed of chicken used for most white egg production in the United States.

-Have students tell why eggs are important to one's health.

FOLLOW-UP ACTIVITY

* Have Poultry Farmer/or Egg Farmer visit class.

* Contact Clemson Extension services in your area to receive eggs which will hatch in 4-6 weeks. (Free)

TEACHER'S NOTES

SUBJECT(s)

Social Studies
Math

TYPE

Entire Class

CLASS TIME

110 Minutes

INSTRUCTIONAL OBJECTIVE

Students will learn about retail stores and careers.

RESOURCES

Local Newspaper.

Local Shopping Mall.

MATERIALS

Photocopy Worksheet "Palmetto Mall"
Ads from Newspaper.

RELATED CAREERS

Marketing
Art
Products
Services
Retail Service
Maintenance
Construction
Communication

NEW WORDS

Enterpreneur
Retail

ACTIVITY

Hand out a "Palmetto Mall" map to each child.

1. How many shoe stores are in the mall?
2. Find the candy store-color it red.
3. Find the restaurant-color it orange.

Ask - If you were lost, where would you go to get help?

Explain to children that they would go to the Information Booth-color it yellow.

Each store is owned by someone-they employ people to work at their store. What jobs do they have:

Manager, Assistant Manager, Cashier, Buyer, Sales Clerk, Bookeeper, Maintenance Technician, Commercial Artist and Stock People.

Which job would you like? What kind of work would you do?

Using the Mall Map - Go shopping. Go to 3 stores - Pretend to buy something in each store. Ask students what they bought in which store and how much money did they spend. (Use play money.)

FOLLOW-UP ACTIVITY

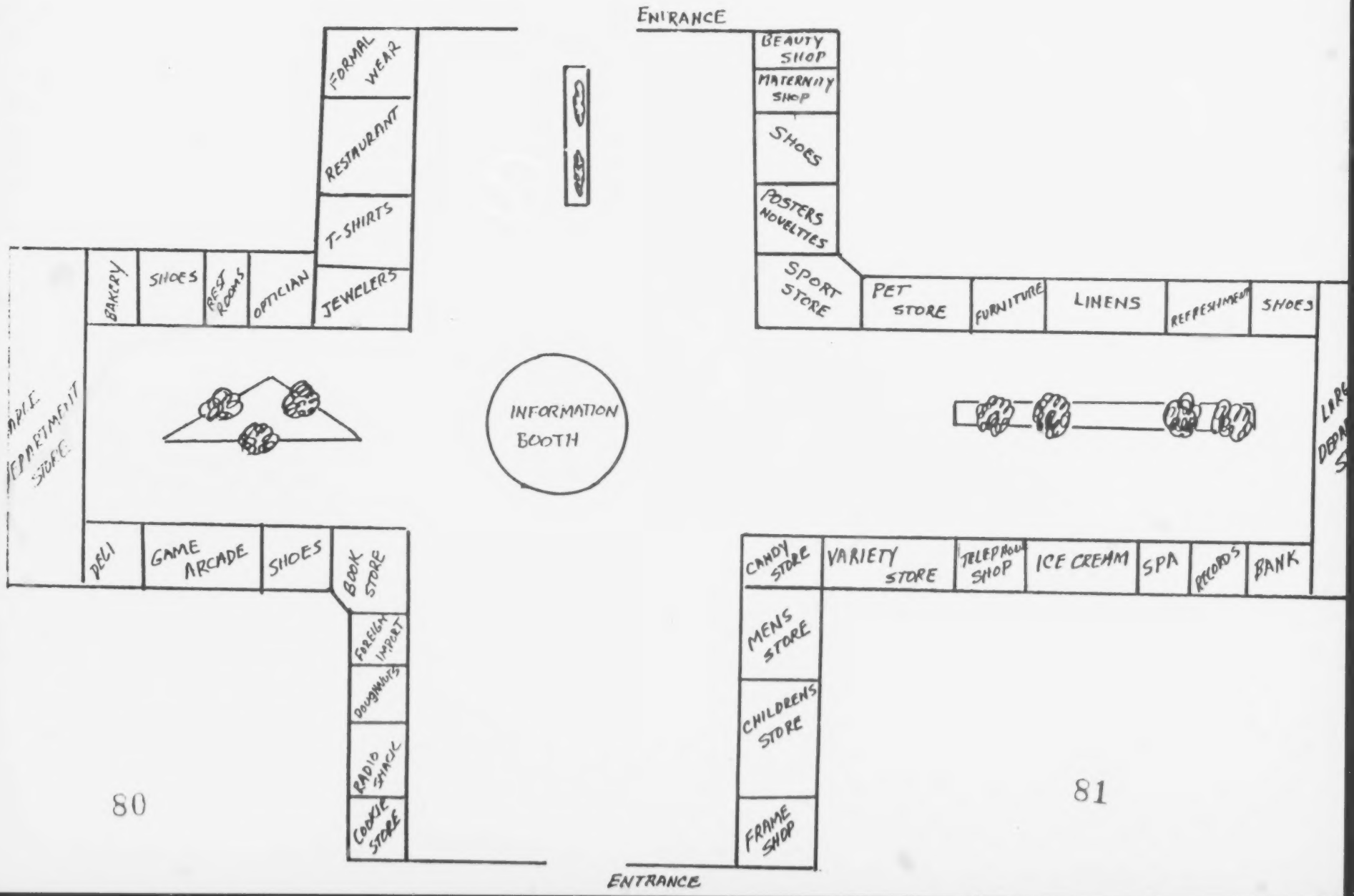
* Using the Mall Map and Newspapers, cut out ads and tell in which store the item(s) are sold.

* Construction of the Mall.

  Workers: Site Developer - Architect, Surveyor, Heavy Earth Mover, Bulldozers.
  Building Construction-Carpenters, Brickmason, Roofers, Framers, Painters, Floor Installers, Air Conditioning/Heat and Plumbers.
  Building Decorators - Horticulture.
  Building Maintenance.

TEACHER'S NOTES

PALMETTO MALL



THIRD GRADE

SUBJECT(s)

Language Arts
Social Studies

TYPE

Group

CLASS TIME

110 Minutes

INSTRUCTIONAL OBJECTIVE

Student will expand their knowledge of careers.

RESOURCES

SCOIS - South Carolina Occupational Information System.

MATERIALS

Worksheet.

RELATED CAREERS

All

NEW WORDS

Skills

ACTIVITY

1. Give each student a copy of the worksheet - Occupational Titles.
   a. Teacher will review the list with students.
      1. Ask students if they can tell about one of the careers on the list.
         a. Education required.
         b. Skills required.
         c. Where the work takes place.
         d. What you would do on the job.
         e. What tools/instruments would be used.
   b. Have students pick three careers that sound interesting and have them put a mark beside their choice.
2. Teacher should review the indicated choices and note:
   a. Careers most often chosen by girls.
   b. Careers most often chosen by boys.
   c. Careers most often chosen.

FOLLOW-UP ACTIVITY

* Contact the vocational or high school counselor and request a SCOIS print-out of careers most often indicated and those that sound interesting.
* Review print-out with class.

TEACHER'S NOTES

The teacher needs to be prepared to tell about some of the careers on the worksheet.

OCCUPATIONAL TITLES

Acrobatic Dancer
Aerospace Engineer
Horticlturist
Airbrush Painter
Animal Caretaker
Appliance Repairer
Aquarist
Aquatic Biologist
Art Therapist
Astrophysicist
Athlete
Audiologist
Automobile Repair Service Estimator
Ballet Dancer
Blacksmith
Bookkeeper
Braille Proofreader
Bricklayer
Broadcast Technician
Buyer
Carder
Cartoonist
Ceramic Engineer
Chef de froid
Chemistry Technologist
Child Care Worker
Clergy
Clothes Designer
Commercial Airplane Pilot
Cosmetologist
Criminologist
Curator
Dental Ceramist
Detective
Disc Jockey
District Attorney
Drywall Installer
Editor and Reporter
Electrical & Electronics Technician
Emergency Medical Technician
Exterminator, Termite
Floral Designer
Food Tester
Fountain Server
Furniture Assembler
Geneticist
Groundskeeper
Hospital Pharmacist
Hotel-Motel Manager
Illustrator, Medical and Scientific
Interpreter & Translator
Landscape Architect
Lithographic Plate Maker
Lyricist
Maintenance Mechanic
Manufacturing/Robotics Engineer
Meat Cutter
Merchant Patroller
Missionary
Model
Motorcycle Repairer
Musician and Composer
Nuclear Medicine Technologist
Paleontologist
Photographer
Plant Pathologist
Race Horse Trainer
Real Estate Sales Agent
Research Worker
Terrazzo Worker
Ticket Agent
Ultrasound Technologist
Vending Machine Mechanic

SUBJECT(s)

Health
Physical Education

TYPE

Pair & Individuals

CLASS TIME

55-110 minutes

INSTRUCTIONAL OBJECTIVE

Increase knowledge of the anatomy and physiology of the ear and careers dependent on the ability to hear well.

RESOURCES

Local Television Station.

Local Radio Station.

Health Textbook.

ENT Specialist.

MATERIALS

Stool or Chair with a revolving seat, model or picture of the human ear, Blindfold.

RELATED CAREERS

Audiologist
Audiometric Technician
Speech Therapist
Trapeze Artist
Pilot
Audio Engineer
Sound Technician
Musician
Vocalist

NEW WORDS

Audiologist
Anatomy
Physiology

ACTIVITY

Discuss the anatomy and physiology of the human ear.

Discuss the semicircular canals where "sense" of balance is located.

Pair students: Have one student stand on one foot with eyes closed. The other student observes all movements made to correct or maintain balance.

Individual student: Have student sit on stool with revolving seat and place the blindfold over their eyes. Spin in a clock wise direction (3-4 revolutions) stop spin and ask student to immediately point in the direction in which he or she was spinning (student will point in opposite direction. Discuss related careers that require a good sense of hearing. (Piano Tuner, Musician, etc.)

FOLLOW-UP ACTIVITY

* Discuss with students various debilitating conditions of the ear.:

  1. Motion sickness - car, air or sea.
  2. Dizziness.
  3. Deafness.

* Invite an E.N.T. (ear-nose-throat) specialist or technician to speak to class. Show students model or picture of the ear. Ask students to list careers or activities that require a good sense of balance (diver, football, player, pilot, trapeze artist, tumbling, dancing, etc.).

TEACHER'S NOTES

SUBJECT(s)

Health
Science

TYPE

Small Groups

INSTRUCTIONAL OBJECTIVE

Students will become aware of the careers that use X-Ray Technology.

RESOURCES

Vocational/Career Center-Health Occupations Instructor.

Local: Hospital, Dentist, Veterinarian, Welding.

MATERIALS

X-Rays from dentist or hospital.

RELATED CAREERS

C.A.T. Scan Operator
Nuclear Medicine
Radiologic Technician

NEW WORDS

Radiation
Diagnosis
Voltage
Infrared Light
Roentgen

CAREER CLUSTER

Health

ACTIVITY

Divide groups into 3-4 students. Each group will research a topic:

1. X-Ray = where and how was it discoverd.
2. The dangers of X-Ray.
3. How do doctors and dentists use X-Ray.
4. What are some new and safer methods of diagnosis.
5. What type of injury or condition will the X-Ray help the doctor diagnose.
6. What school subjects are related to the careers in Radiology.
7. How are X-Rays used in industry. (Welding)

FOLLOW-UP ACTIVITY

* Field trip to the hospital to visit the Radiology Units.
* Invite an X-Ray Technician to speak to the class.

TEACHER'S NOTES

SUBJECT(s)

Language Arts

TYPE

Group

CLASS TIME

55 Minutes

INSTRUCTIONAL OBJECTIVE

Student will identify several careers related to pets and animals.

RESOURCES

Local Pet and Animal Career Practitioners.

MATERIALS

Worksheet.

RELATED CAREERS

Pet and Animal Careers

NEW WORDS

Exotic
Pet
Diverse (varied)

ACTIVITY

1. Begin activity by asking students:

   a. "How many have a pet?"
   b. "What kind of pet do you have?"
   c. "From where did you get your pet?"

2. Careers related to the pet and animal industry are diverse and interesting. Some require several years of formal training, others require less.

   a. Teacher should have student expand their knowledge of these careers by investigating a career that interests them. (worksheet - Pet and Careers).

FOLLOW-UP ACTIVITY

* Invite a person involved in an unusual pet and animal career to class.

PET AND ANIMAL CAREERS

Here are some careers that might interest you if you like animals:

1. Pet Store
2. Veterinarian
3. Pet Assessories
4. Animal Breeders
5. Pet Food
6. Animal Trainers
7. Pet Cemetary
8. Exotic Animal Supplier
9. Pet Registries
10. Animal Groomers
11. Zoos
12. Animal Photographers
13. Animal Shows (Fairs-Rodeo-Dog and Horse Shows-Circus-Sea World, etc.)
14. Hunting-Fishing Guides
15. Animal Dentist-Chiropractor

SUBJECT(s)

Math

TYPE

Entire Class

CLASS TIME

Two Periods.

INSTRUCTIONAL OBJECTIVE

The students will identify the career-surveyor and list several tasks, and responsibilities of those involved in this work.

RESOURCES

Yellow Pages of Telephone Book. "Surveying Instruments", "Surveying Aerial" & "Surveyors Land".

MATERIALS

Worksheet, Map, Ruler.

RELATED CAREERS

Aerial Surveyors
Cartographer
City Planner
Photography
Real Estate
Civil Engineers
Marine Surveyor

NEW WORDS

Transit-Define
Tripod
Compass
Site
Intersection
Contoured

ACTIVITY

Review the various careers related to: Surveyor

Surveyor - One who examines the land and measures it.

What are some tools a surveyor uses?

1) Compass; 2) Transit; 3) Stake; 4) String; 5) Camera; 6) Tripod; 7) Maps; 8) Rods - Staff for measuring.

Surveyors help build roads, bridges and prepare sites for buildings.

Land must be level and contoured for drainage before buildings and roads are constructed - Why?

Using worksheets, measure the distances between the letters. This is the route the new road will follow.

Have the students find two problems that are to be solved in the construction of the road.

#1 Between letter B and C - (Intersection).

#2 Between letters J and K - (Bridge).

FOLLOW-UP ACTIVITY

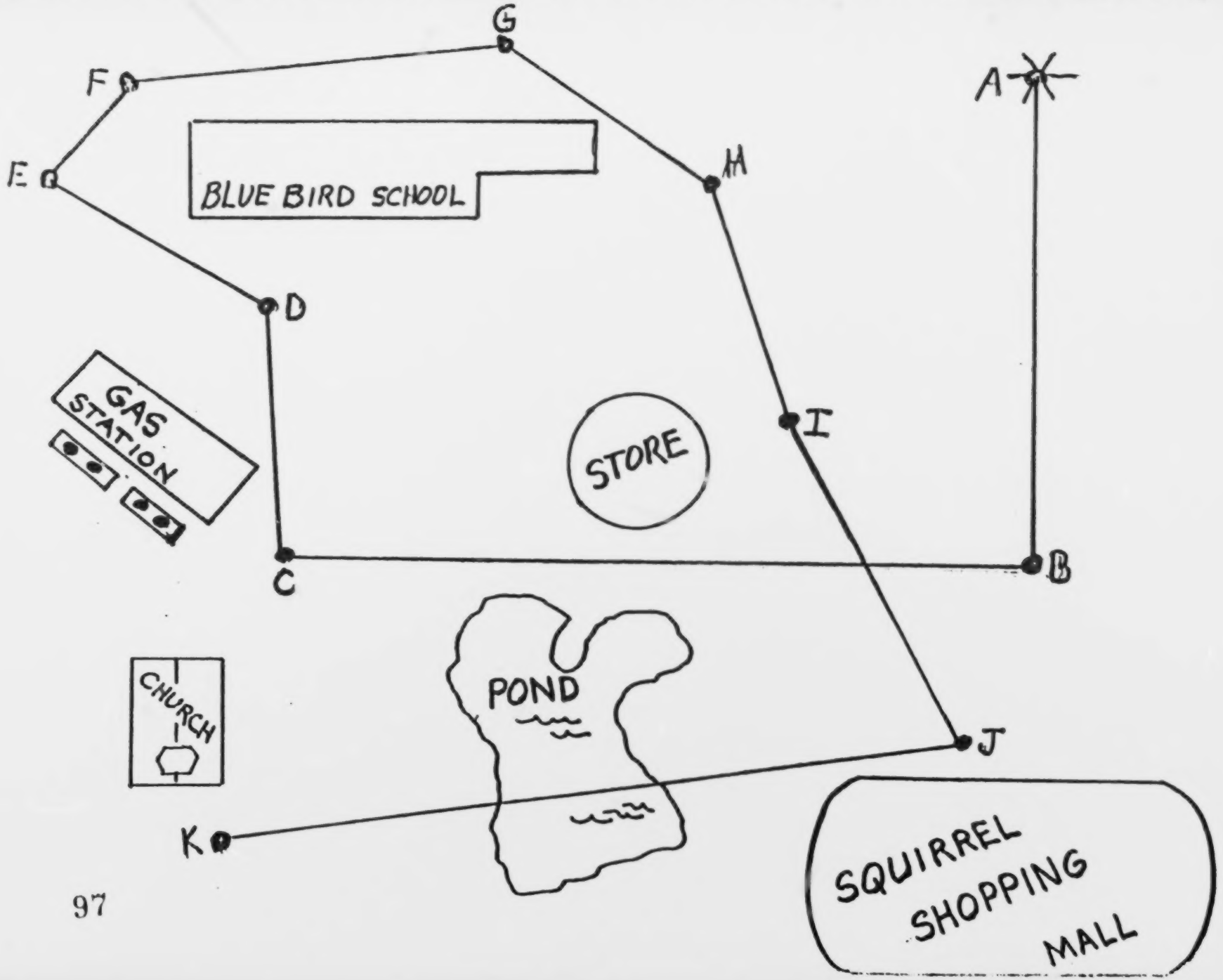
* Ask a surveyor to come tell about his/her career.

TEACHER'S NOTES

New City

This is New City. A road is being built. Using a ruler, measure the lines.

1. A to B = _____ inches
2. B to C = _____ inches
3. C to D = _____ inches
4. D to E = _____ inches
5. E to F = _____ inches
6. F to G = _____ inches
7. G to H = _____ inches
8. H to I = _____ inches
9. I to J = _____ inches
10. J to K = _____ inches


G
F
A
E
BLUE BIRD SCHOOL
H
D
GAS STATION
STORE
I
C
B
CHURCH
POND
J
K
SQUIRREL SHOPPING MALL

SUBJECT(s)

Health

TYPE

Entire Class

CLASS TIME

55 minutes

INSTRUCTIONAL OBJECTIVE

Students will learn how to make butter and buttermilk.

Students will learn about careers in the dairy industry.

RESOURCES

Local Clemson University Cooperative Extension Service Office.

MATERIALS

Half & Half Milk-2 pts., 2 large jars with lids, ice and large container, crackers.

RELATED CAREERS

Dairyman
Herdsman
Milk Truck Driver
Dairy Processing Plant
Ice Cream Production
Sales and Service of Equipment

NEW WORDS

CAREER CLUSTER

Agribusiness

ACTIVITY

Make butter and buttermilk.

a. Take half and half milk and let it stand until it reaches room temperature.

b. Pour milk into jars (1 pint in each); put the top on securely and shake vigorously for about 5 minutes or until clumps of butter appear. Let students take turns shaking the jars.

c. Pour off buttermilk and set the jar in a container of ice to harden the butter.

d. After butter and buttermilk have chilled, allow students to sample. The butter can be spread on crackers for students to taste.

e. Milk is important for good health because it provides us with the mineral calcium and vitamins A and D.

FOLLOW-UP ACTIVITY

* Visit a local dairy farm.
* Visit a local dairy processing plant.
* What other animals provide milk for people? (Goats, Horses, Camels, Water Buffalos, etc.)

TEACHER'S NOTES

SUBJECT(s)

Math

TYPE

Entire Class

CLASS TIME

110 minutes

INSTRUCTIONAL OBJECTIVE

Students will recognize that educational achievement & skill training influences salaries.

RESOURCES

Vocational/Career Guidance Counselor.

SCOIS-Jobank Print-Out.

MATERIALS

List of Careers and Salaries.

RELATED CAREERS

NEW WORDS

Career

CAREER CLUSTER

All.

ACTIVITY

Begin by telling children that money earned in jobs is often influenced by the amount of education and skills you have. Examples of entry level wages are:

Jobs For Non-High School Graduates

Fast Food Worker = 3.35
Lumber Handler = 3.75
Sales-Sporting Goods = 3.50
Film Rental Clerk = 3.75

Jobs For High School Graduates

Customer Service = 6.00
Travel Agent = 5.00
Typist = 5.50
Flight Attendant = 6.25

Jobs For Two-Year College Graduates

LPN = 7.40
Respiratory Therapist = 8.00
Commercial Photography = 8.25
Advertising = 7.25

Jobs For Four-Year College Graduates

Chemist = 10.00
Computer Programmer = 9.00
Forester = 7.80
Teacher = 9.00

Jobs For Masters Degree

Guidance Counselor = 11.00
Librarian = 10.00

Have children pick a career from the above list - using their math skills, have them estimate the daily salary for an 8 hour day - Weekly Salary.

FOLLOW-UP ACTIVITY

* Have local job service representative come to class and tell about job opportunities in the community. Tell about most unusual and highest salary for a job.

* Have the Career Guidance Counselor run a Jobank print-out of local job openings. Use information to develop more activities.

TEACHER'S NOTES

SUBJECT(s)

Art

TYPE

Individual

CLASS TIME

110 Minutes

INSTRUCTIONAL OBJECTIVE

Students will replicate a task of a Fashion Designer by sketching a costume of the future.

RESOURCES

Area Vocational Center, Occupational Home Economics Teacher.

Telephone Book, Yellow Pages - Tailor Dressmaker.

MATERIALS

Paper, Pencils, Crayons, Markers.

RELATED CAREERS

Fashion Designer
Dress Maker
Tailor
Fabric Designer
Sales-Retail/Commercial
Careers in Textiles
Research Chemist

NEW WORDS

Designer
Fashion
Graphic
Creative
Generated
Complementary
Harmonizing
Accessories

CAREER CLUSTER

Art & Humanities

ACTIVITY

Discuss various careers associated with art using list "Related Careers".

Students will: Design complete costume of harmonizing or complementary clothing jewelry/clothing for the future.

FOLLOW-UP ACTIVITY

* Name some factors that should be considered when designing cloth and clothes. 1) Climate; 2) Occasion; 3) Special Age Groups; 4) Sizes; 5) Gender; 6) Color and Fabric and etc.

* Invite an Occupational Home Economics student interested in Fashion Design to make a presentation to the class.

* Write a Fashion Design School for more information.

TEACHER'S NOTES

High School guidance counselors will have addresses for Fashion Design Schools.

SUBJECT(s)

Science
Language Arts

TYPE

Group

CLASS TIME

110 Minutes

INSTRUCTIONAL OBJECTIVE

The student will be able to explain how clouds are formed.

The student will recognize how "weather" affects lives.

RESOURCES

MATERIALS

Thermometer, Flashlight, Wide Mouthed Jar, Hot Water.

RELATED CAREERS

Meteorologist
Air Conditioning & Heating

NEW WORDS

CAREER CLUSTER

Environment

ACTIVITY

Teacher introduces the idea that the "weather" determines many things.

a. Ask students - How does the weather affect our lives?

Make list on chalk board.
(clothing, activities, travel, food, homes, health, school, job, entertainment)

b. Clouds are environmental indicators of the weather.

1) White puffy clouds - Fair Weather
2) Dark heavy clouds - Threatening Weather

Clouds are formed when cold air meets warm moist air.

Teacher Demonstration: In a dark room, pour HOT water into a wide mouthed jar. Place a tray of ice cubes on top of the jar. Turn on a flashlight and shine the beam at the middle of the jar. What do you see? A small cloud will form.

c. Add the job of "weather forecaster" to the helpers list. Using a thermometer the students assigned to this task will each record.

1. Outside Temperatures.
2. Inside Temperatures.

Draw a graph to record the weeks temperature changes.

d. Explain what a barometer indicates.

FOLLOW-UP ACTIVITY

* Have children relate - How clouds are formed.
* Draw pictures of: Fair weather clouds and threatening clouds.
* Invite a person whose job is weather forecasting to speak to the class about their career.

TEACHER'S NOTES

SUBJECT(s)

Health
Art
Physical Education

TYPE

Small Group
Individual

CLASS TIME

55-110 minutes

INSTRUCTIONAL OBJECTIVE

Students will recognize that exercise is important for good health.

RESOURCES

Space Colony: Frontier of the 21st Century.

"Where Dreams Come True."

MATERIALS

Paper, Pencil.

RELATED CAREERS

Architect
Wellness Consultant
Sports Psychologist
Physical Fitness Director
Design Engineer

NEW WORDS

Space
Spa
Residence
Environment
Invent

CAREER CLUSTER

Construction
Health

ACTIVITY

"Space Spa"

Discuss what living quarters on space stations will look like.

Emphasize that space residents must be healthy and in good physical condition.

Discuss how residents will stay healthy and in good physical condition in this "Space" environment.

Designing a Space Spa: Divide children into groups of 3-4. Using paper and pencil, draw the floor plan for a space spa and label rooms. Invent equipment that will be used. Draw pictures.

FOLLOW-UP ACTIVITY

* Show drawings of exercise equipment and have students explain how and why it is used.
* Ask students if they would like to be space poineers. Why or Why Not?
* Ask a physical fitness person to visit the class (spa, coach, P.E. Teacher). Give some exercises and explain how and why some equipment is used.

TEACHER'S NOTES

"A Space Station will be in place by mid-1990's" - NASA 1987.

See Worksheet for more information on space stations and exercise.

Exercise

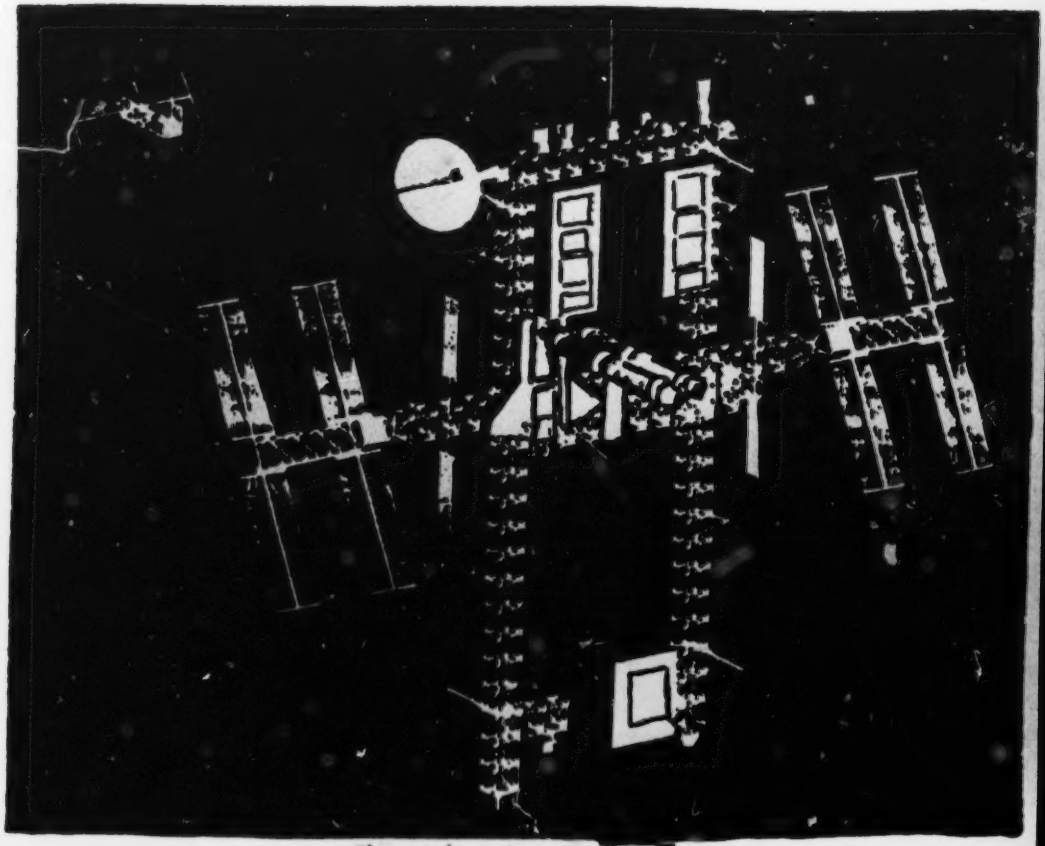
Resistance exercise is as necessary as proper food and sleep to maintain your good health in zero gravity. On past missions, astronauts have suffered some bone and muscle deterioration despite their hard physical exertion in space, because their bodies were not getting the resistance they were accustomed to in gravity.

To help offset this, you will walk a treadmill on the Shuttle. Flight physicians recommend at least 15 minutes daily on the treadmill for missions lasting from seven to 14 days. On 30-day missions, the time should be extended to 30 minutes. In addition to the healthful affect on your bones and muscles, it will help you readjust more quickly to Earth gravity on your return home.

When not in use, the treadmill is kept in a locker. Set it near the hatch window so you can overcome the monotony of the exercise by looking out occasionally on the passing world. Or, turn on some music. The treadmill consists of a teflon-coated aluminum sheet on a roller. Its bottom plugs lock into the holes in the floor to make it secure. Straps come from its base to tie around your waist. The tighter the straps, the greater the resistance encountered during the workout. Other straps attach from a bar in front of you to your waist. This lets you exercise your arms by pushing upward on the bar as you trudge.

Make sure the air is circulating well about you by turning up the duct close to you. Otherwise, when your perspire, you may be creating a nightmare. For the perspiration will cling to your skin just as water always does to a solid surface in zero gravity. It does not drip off, but only grows thicker. On Skylab, astronauts used a hose blower to get it off their skins. This created a new problem because the moisture came off in sheets. Finally, they were forced to use a vacuum cleaner to suck it out of the air.

Exercise In Space



Shown above is a computer-generated representation of a new NASA reference configuration for the permanent multipurpose Space Station being developed for initial occupancy in the mid-1990s.

FOURTH GRADE

SUBJECT(s)

Any Subject Area Deemed Appropriate

TYPE

Entire Class

CLASS TIME

One Period

INSTRUCTIONAL OBJECTIVE

Students will have an individual Career Development Record indicating changing career interests as well as personal growth in attitudes, aptitudes and achievements.

RESOURCES

MATERIALS

Photo copy: Career Development Record for each student.

RELATED CAREERS

NEW WORDS

Career
Occupation
Work

ACTIVITY

The Career Development Record is a history of individual student career aspirations including their aptitudes, interests, attitudes and achievements.

Grade K will be the initial activity. The assessment, to be effective, should be continued in grades 2, 4, and 6.

The Career Development Record could be used by teachers and counselors to better understand the aspirations of their students K-12.

The teachers' judgement will be relied upon as to what time this assessment should be administered during the school year.

FOLLOW-UP ACTIVITY

TEACHER'S NOTES

CAREER DEVELOPMENT RECORD

_____
Student's Name

GRADE 4 DATE:

High Interest Subject

_____
Low Interest Subject

_____
Prefers Activities:

Outside_____Inside_____Both_____

Physically:

Active_____Average_____Sedentary_____

Achievement(s)

_____
_____

Hobby/Interest(s)

_____
_____

Wants to be a:_____

Comments:

_____
_____

SUBJECT(s)

Math
Language Arts
Computers

TYPE

CLASS TIME

As Needed

INSTRUCTIONAL OBJECTIVE

Students will learn about careers relating to computers.

RESOURCES

Area Vocational Center-Electricity Electronics Instructor.-Computer Repair and Office Occupations

Newspaper Want Ads.

MATERIALS

Occupation Outlook Handbook, Newspaper-Employment Ads.

RELATED CAREERS

Office Occupations
Teacher-Keyboarding

NEW WORDS

Computer Services Technician
Computer Systems Analyst
Computer Operator
Computer Programmer

Types of Computers:
Digital - counting device
Analog - variables-e.g. Convert weight to cost-Post Office
Hybred - Combination of Digital and Analog

CAREER CLUSTER

Business & Office Occupations

ACTIVITY

List on the chalkboard the 4 types of workers that work with computers. (See New Words.)

Using a computer, show the children a program.

Ask: Which worker puts information into the computers, loads the computer with disks or tapes and watches the screen while the computer works? (Computer Operator)

Ask: Which worker keeps the computer working and makes needed repairs? (Computer Service Technician)

Ask: Which worker plans ways businesses can use computers? (Computer Systems Analyst)

Ask: Which worker writes the step by step instructions for computers to organize information? (Computer Programmer)

Which worker receives the highest pay?: Computer Programmer $19,000 - 2-4 years college; Computer Operator $12,000 - high school vocational course; Computer Systems Analyst $31,000 - 4 years college; and Computer Service Technician $20,000 - 1-2 years electronics.

FOLLOW-UP ACTIVITY

* Invite a person who works as a Computer Technician, Systems Analyst, Operator and Programmer to visit the class and tell about their jobs.

* Search the want-ad section of the newspaper for jobs relating to computers. Have students bring to class.

TEACHER'S NOTES

SUBJECT(s)

Science
Art

TYPE

Total Class

CLASS TIME

Two-Three Class Periods

INSTRUCTIONAL OBJECTIVE

Broaden students awareness of careers related to the preservation and displays of objects from the the past and present.

RESOURCES

Yellow Pages-Taxidermist, Museums.

S.C. State Museum Columbia, S.C.

York County Museum, Rock Hill, S.C.

Discovery Place Science Museum, Charlotte, N.C.

MATERIALS

Flour, Water, Cardboard or Wooden Base, Twigs and Leaves, Pieces of Wood, Any Other Materials, Food Color, Wire, Wax and Toys.

RELATED CAREERS

Docent
Anthropologist
Historian
Taxidermist
Museum Curator
Archeologist
Exhibit Designer
Exhibit Craftsman
Security
Maintenance

NEW WORDS

Curator
Archeologist
Anthropologist
Museum
Craftsman
Prehistoric
Diorama

CAREER CLUSTER

Public Service

ACTIVITY

Begin by explaining that there are various kinds of museums. Who has visited a museum? What did you see in the museum?

The definition of Museum is: An institution devoted to the procurement, care, study and display of objects of interest or value.

Several Museums in South Carolina:

State Museum - Columbia-Artifacts
Art Museum - Spartanburg, Charleston, Columbia-Painting, Sculpture
Confederate Museum - Charleston-Artifacts of early Southern living
York County Museum - Rock Hill-Diorama of animals from around the world
Stock Car Hall of Fame/Joe Weatherly Museum - Darlington-Racing Cars
Railroad Museum - Branchville-Railroad Memorabilia

We are going to design an exhibit. This will be a diorama-A scenic representation in which sculptured figures (can use toys) and life like details are displayed.

a. Have children pick a scene: racing cars, horse farm, pre-historic animals, battle ground, my house and neighborhood or favorite story or futuristic city.

b. Mix flour and water and make thick paste. Use as land contour-mountains-volcanos, etc. Let Dry!

c. Make figures (if needed) of wire or wax.

FOLLOW-UP ACTIVITY

* Visit a museum that has Dioramas.

* Invite a taxidermist to class (Bring animals at various stages of preservation).

TEACHER'S NOTES

SUBJECT(s)

Social Studies
Math

TYPE

Entire Class

CLASS TIME

55 Minutes

INSTRUCTIONAL OBJECTIVE

Students will be able to discuss various businesses as listed in the yellow pages of the local telephone book.

Students will be able to list the five time zones in the U.S.A.

RESOURCES

Worksheet: Time Zones.

Telephone Directory.

MATERIALS

Worksheet
Telephone Directory

RELATED CAREERS

Telecommunications Cartographer
Directory Advertising Sales Representative
(Outside) Plant Technician (Services)
Technician (Installer)
Cable Splicing Techician
Long Distance Operator

NEW WORDS

ACTIVITY

Using the yellow pages, find the following businesses. Tell what they do.

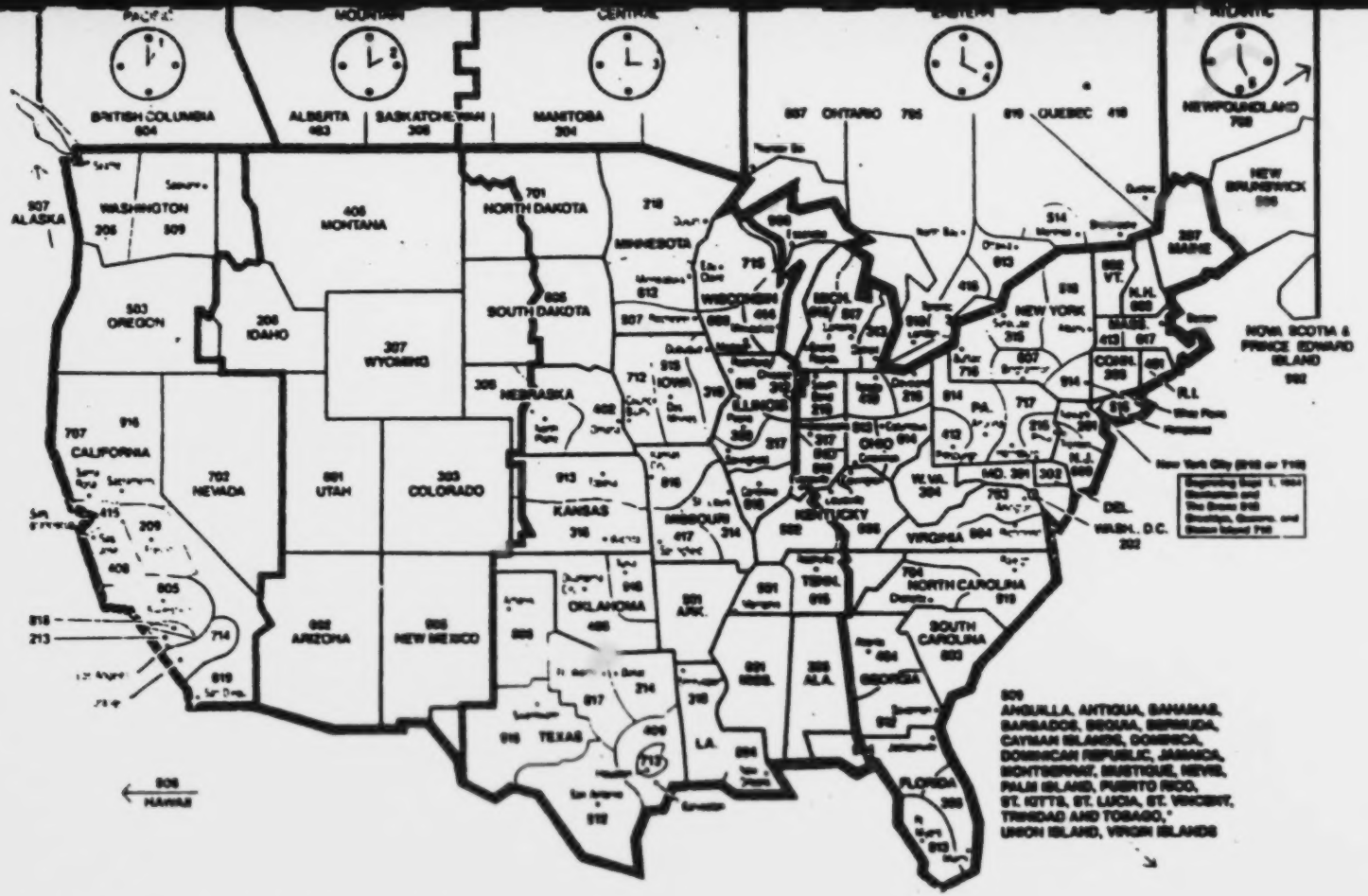
1. Abattoirs
2. Acoustical Consultant
3. Publishers
4. Physician-Orthopedics
5. Guard Dogs

Time Zones: Hand out worksheet. Have students name and color the time zone they live in. Have students complete activity on the time zone worksheet.

FOLLOW-UP ACTIVITY

TEACHER'S NOTES

Yellow page listings vary from city to city. Select businesses indigenous to your area. Use with "Time" unit in Math.



1. List the names of the 5 time zones.

   1. 2. 3. 4.
   5.

2. If it is 2:00 P.M. in South Carolina, what time is it in Los Angeles, California. _____

3. Color the States and parts of States that are included in Mountain Time yellow.

4. Why do we have different time zones?

5. What time zone do you live in?

6. What is the area code for your city?

7. Do you know someone who lives in another state - what time zone?

SUBJECT(s)

Science

TYPE

Entire Class

CLASS TIME

55 Minutes

INSTRUCTIONAL OBJECTIVE

Students will be able to describe several careers related to fire control and safety.

RESOURCES

Local Fire Department.

Spinoff
NASA Publication
"Space Technology For the Fire Department".

MATERIALS

Lab Materials.

RELATED CAREERS

Fire Science Specialists
Fire Insurance Adjusters
Fire Prevention Engineer
Fire Inspector
Safety Inspector
Smoke Jumper
Fire Fighter

NEW WORDS

Oxygen
Wildfire
Ignite
Detect(or)

CAREER CLUSTER

Public Service

ACTIVITY

There are many careers that deal with fire control. Ask the class to name as many as they can. Write answers on the chalkboard.

Local Fire Fighter-Hoseman, Ladderman, Truckman, Truckdriver, Tillerman.

Marine Fire Fighter, Fire Fighter, Crash & Rescue, Petroleum Fire Fighter Smoke Jumper, Forest Fire.

Demonstrate through a Laboratory activity various kinds of fires and what different actions must be taken to control these fires. (Chemical - Wood - Oil)

FOLLOW-UP ACTIVITY

Wildfires in the forests of South Carolina are threatening to the lives of people and animals. What causes these fires? How can we prevent them from occuring?

Walk through the school and look for areas where fire could start.

Review procedures for evacuating the school in case of fire.

TEACHER'S NOTES

This activity would be appropriate fo[illegible] Prevention Week.

SUBJECT(s)

Science

TYPE

Individual or Small Group

CLASS TIME

90 Minutes

INSTRUCTIONAL OBJECTIVE

Student will recognize solar energy.

Student will construct a solar cooker.

RESOURCES

"Kids' Whole Future Catalog".

Elementary Aerospace Technology Book.

Aboard the Space Shuttle
NASA
Division of Public Affairs
Washington, D.C.

MATERIALS

Student Activity Sheet
2 Paper Cups, 1-6 oz. and 1-8 oz., 2 Pieces of Construction Paper, Piece of Black Construction Paper, 1 Piece of White Construction Paper, Aluminum Foil, Clear Plastic Wrap, Newspaper, Tape, Scissors, and a Sliced Apple, A Bright Sunny Day

NEW WORDS

CAREER CLUSTER

Consumer and Homemaking

ACTIVITY

Students will make a solar cooker, using the directions from the worksheet.

Discuss how solar energy can be used to cook with and why the various materials are used.

Divide class into small groups and have each group construct a solar cooker, using materials previously brought from home.

Students could be encouraged to develop other designs for a solar cooker and try other foods. (e.g. hotdog cooker)

FOLLOW-UP ACTIVITY

* Invite resource speaker into class to talk about sources of energy, specifically solar energy.

TEACHER'S NOTES

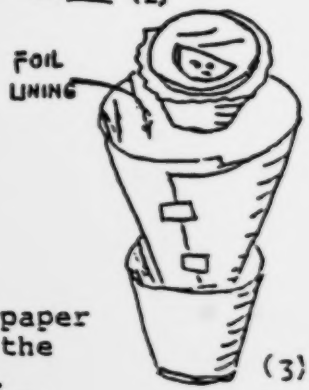
The NASA publication is very informative about living on board the space shuttle.

HOW TO MAKE A SOLAR COOKER

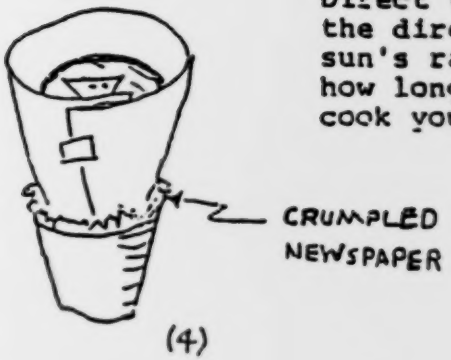
STEP I — Line the inside of the small paper cup with the black construction paper (1)

STEP II — Place the slice of apple in the cup and cover the top of the cup tightly with the plastic wrap (2)

STEP III — Make a large cone out of white paper and fasten together with tape. Line the inside with aluminum foil and place the cup with the apple inside the cone. Insert the cone inside the large cup (3)



STEP IV — Stuff crumpled newspaper around the base of the cone for insulation. Direct the cups toward the direction of the sun's rays. Now see how long it takes to cook your apples (4)



SUBJECT(s)

Math
Language Arts

TYPE

Entire Class

CLASS TIME

Two Periods

INSTRUCTIONAL OBJECTIVE

Students will become aware of how inventions change our life style.

RESOURCES

Film-S.C. State Department of Education, Audio Visual Library: Place of Dreams, The Universal Vehicle.

Materials can be acquired from Vocational/Career Center - Building Construction Department.

MATERIALS

Assortment of Bolts, Nuts, Screws, and Washers, Ruler (inch-metric), Worksheets, Old Toys-Metal or Wooden, Transformers.

RELATED CAREERS

Manufacturing
Robot Tender
Mechanical Engineer
Inventor
Assembly Line Worker
Tool Maker

NEW WORDS

Machine
Mechanic
Invention
Predict

CAREER CLUSTER

Manufacturing

ACTIVITY

Show students and let them handle an assortment of nuts, bolts, screws.

Explain - that these are used to build machines.

Long ago things were built using hand carved wooden materials.

Measure the nuts, bolts, and screws on the worksheet.

Compare how inventions have changed our lives. Predict the future - using the worksheet.

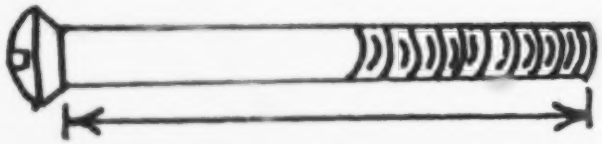
FOLLOW-UP ACTIVITY

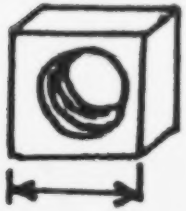
* Discuss how inventions have changed our lives.
* Display - Wooden Toys, Metal Toys and Plastic Toys.
* Discuss how the classroom of the future will look.

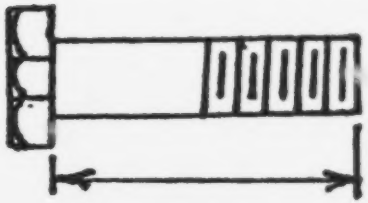
Invent: chairs, desks, etc.

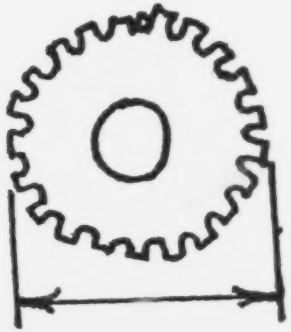
TEACHER'S NOTES

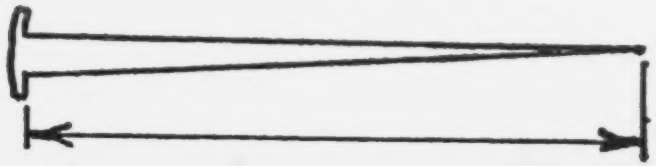
MEASURE each item. Hint: 1 centimeter equals .39 inch

1. 

2. 

3. 

4. 

5. 

_____in./cm._____

_____in./cm._____

_____in./cm._____

_____in./cm._____

_____in./cm._____

CAN YOU PREDICT THE FUTURE

LONG AGO	TODAY	THE FUTURE
1. Wash clothes in stream	Washing Machine	_____
2. Cooked over fire	Stove/Microwave	_____
3. Walked or rode horses	Automobile/Aircraft	_____
4. Lived in caves	Wooden/Cement Homes	_____
5. Smoke signals	Satellites/Telephones	_____
6. Write/draw with charred sticks	Pens, Pencils, Crayons	_____
7. Weapons of rocks and sticks	Missiles, Nuclear Bombs	_____
8. Clothes of animal skins	Various Man-Made Fabrics and Cottons	_____
9. Parents teach	Teachers, Televisions, Computers	_____
10. Toys of rocks and sticks	Manufactured	_____

SUBJECT(s)

Art
Language Arts

TYPE

Individual

CLASS TIME

110 Minutes

INSTRUCTIONAL OBJECTIVE

Students will explain the many uses of plastic and show how this material is the material basis of a variety of careers.

RESOURCES

Yellow Pages of Telephone Book "Plastics".

MATERIALS

Play Dough, Cardboard or Heavy Tagboard, Wooden Popsicle Sticks for shaping and cutting.

RELATED CAREERS

Plumbing
Boat Building
Furniture
Sports Equipment
Packaging
Manufacturing
Toys

NEW WORDS

Plastic
Extrusion

CAREER CLUSTER

Manufacturing
Construction

ACTIVITY

A. The word plastic comes from the Greek word Plastikos which means to form or fit for molding. Developed in the early 1930's.

   1. Plastics are man-made materials.

   2. Common Uses:

      a. PVC (Polyvinyl Chloride) pipes and furniture
      b. Fiberglass boats, drapes
      c. Packaging - bottles, bags, ribbon
      d. Sports Equipment - whiffle ball - bats - yo-yo
      e. Fiber Optics- Communications
      f. Eating utensils, plates, and cups

B. Have students make a list of articles made of plastic found in the classroom.

   1. Name the materials these articles would be made from if they were not plastic.

      a. Why is plastic better/not better?

C. Give each student a piece of play dough, which is a form of plastic.

   1. Students will make a play dough figure(s) representing a career.

      a. Students begin by drawing a pattern on the tagboard, placing the pattern piece(s) on the playdough and then cut out using the the popsicle sticks.
      b. Figure could consist of several overlaying pattern pieces.

FOLLOW-UP ACTIVITY

* Using the yellow pages of the telephone book, find a business or industry that uses, manufactures, or distributes plastic materials to come speak to the class.

TEACHER'S NOTES

SUBJECT(s)

Language Arts

TYPE

Group

CLASS TIME

55 Minutes

INSTRUCTIONAL OBJECTIVE

Students will become aware of several resources for occupational career information

RESOURCES

South Carolina Occupational Information System

High School/ Vocational Career Guidance Counselors

Dictionary of Occupational Titles

MATERIALS

Jobank Print-Out
Dictionary of Occupational Titles

RELATED CAREERS

All

NEW WORDS

Post-Secondary

ACTIVITY

S.C.O.I.S. - The South Carolina Occupational Information System is a computerized method of delivering up-to-date career, educational, and occupational information to those who need it. Terminals are located in all vocational/career centers and most high schools.

A. Contact the career guidance counselor at the high school or vocational/career center and request a print-out of the "Jobank" file for your area.

The "Jobank" program provides information on current job openings available in your area.

1. Cut print-out into strips with each strip having a job description.
2. Give each child a job description strip and say: "This is your job today".
3. Using the Dictionary of Occupational Titles (D.O.T.) have student research "their" job.

	D.O.T. Number
DELIVERER FOOD	(299.477-010) #0229400
Salary:	$3.35/Hr.
Education:	High School Graduate
Minimum Age:	18 Yrs
Experience:	0 Mos

4. Using the salary figure, have students:
   a. Estimate their weekly salary
   b. Estimate their monthly salary
   c. Estimate their yearly salary

FOLLOW-UP ACTIVITY

* Compare the salaries of those jobs which require post-secondary training with those that do not require a high school diploma.

TEACHER'S NOTES

SUBJECT(s)

Math
Social Studies

TYPE

Entire Class

CLASS TIME

One Period

INSTRUCTIONAL OBJECTIVE

Students will be able to use departure and arrival times of buses and airplanes.

RESOURCES

Travel Agent

Bus & Airline Terminals for Schedules

Career Guidance Counselor

MATERIALS

Time Schedule for Bus and Airline, Copied Passport, Construction Paper, Scissors, Crayons, and Ink Pad.

RELATED CAREERS

Reservationist
Travel Agent
Air Traffic Controller

NEW WORDS

CAREER CLUSTER

Transportation

ACTIVITY

Obtain time schedules for bus and airplane arrivals and departures. Discuss with students how schedules are used and their importance.

Obtain a copy of a passport and explain its use. Have the children prepare their own passport using construction paper, scissors, ink pad for finger prints, and school pictures.

Contact the high school career guidance counselor and have them do a coin print-out of Air Traffic Controller. Print-out will provide information concerning all aspects of this career.

1. Ask students:

   a. What is this person's job?
   b. Why is it important?

FOLLOW-UP ACTIVITY

* Bring in a speaker from a local travel agency to talk about his or her job and regulations for traveling from country to country.

TEACHER'S NOTES

SUBJECT(s)

Language Arts
Guidance

TYPE

Group

CLASS TIME

275 Minutes

INSTRUCTIONAL OBJECTIVE

Students will demonstrate an awareness of careers in fourteen career clusters.

RESOURCES

"Picking Your Path"
Instructional
Television (ITV)
5 Programs and
Teachers' Guide
Ms. Reta Richardson
206 Rutledge Bldg.
1429 Senate Street
Columbia, S.C.

South Carolina
Instructional
Television and
Radio Resources
Book.

MATERIALS

Video Program
Teachers' Guide

RELATED CAREERS

All

NEW WORDS

ACTIVITY

"Picking Your Path" - This program contains five fifteen minute video taped segments. The Teachers' Guide contains activities that will broaden the students' concept of careers.

Please refer to the South Carolina Instructional Television and Radio Resources Book for the scheduled airings of these programs.

FOLLOW-UP ACTIVITY

TEACHER'S NOTES

SUBJECT(s)

Language Arts

TYPE

Group

CLASS TIME

INSTRUCTIONAL OBJECTIVE

Students will define the terms technology and careers.

Students will relate recent techonology advancements in several career clusters.

RESOURCES

Career Clusters List.

Spinoff
Superintendent of Documents
U.S. Government Printing Office
Washington, D.C.
20402

MATERIALS

RELATED CAREERS

All

NEW WORDS

Livelihood
Derives

ACTIVITY

1. Write definitions on the chalkboard:

   Technology - Scientific method of achieving a useful design.

   Career - An occupation for which a person prepares themself both mentally and physically and through which one derives a livelihood.

2. Ask students: How has technology affected your life?

   Write on chalkboard six career clusters.

   Have students suggest useful designs under each of the career cluster headings.

Health	Transportation	Communication
Nuclear Magnetic Radiation	Space Shuttle	Satellites
Laser	Supersonic Aircraft	Fiber Optics
CAT Scan	Bullet Trains	Superconductors
Computers	Computers	Cable TV
	Auto Design	Computers

Construction	Business & Office	Consumer & Homemaking
Laser	Computers	Microwave
Solar Heat	Word Processors	Computers
Computers		

3. Computers have had a profound effect on every career cluster. The future will continue to have many careers which will require knowledge and skills in the use, maintenance and design of computers.

   a. Have students ask their parents how computers are used at their workplace.

FOLLOW-UP ACTIVITY

"Spinoff" is a NASA publication that explains how technology developed through the Space Program can be transferred to other uses creating new products and new jobs.

TEACHER'S NOTES

FIFTH GRADE

SUBJECT(s)

Language Arts

TYPE

Group

CLASS TIME

55 Minutes

INSTRUCTIONAL OBJECTIVE

Students will be able to relate how personal interests are important considerations when choosing a career.

RESOURCES

MATERIALS

Worksheet.

RELATED CAREERS

All Careers

NEW WORDS

CAREER CLUSTER

All

ACTIVITY

Being aware of your interests and values will help you choose careers in which you will be happy and successful.

Do you like working with people, data, or things?

People - Working with others.
Data - Working with numbers.
Things - Working with tools and machines.

On the chalkboard, make 3 columns - headed by People, Data, and Things. Under each column ask students to write a career title that deals primarily with that heading.

People	Data	Things
Clergy	Brokers	Mechanics
Nurses	Engineers	Architects
Salespeople	Accountants	Computer Technicians
Teachers	Tax Assessors	Pilot
Dancers	Payroll Banker	Truckdrivers
Cabin Attendants		Builders
Mayors		Crane Operators

On the worksheet, have students check the requirements they think are necessary for them to be happy and successful in a career.
(Photo copy a worksheet for each student.)

FOLLOW-UP ACTIVITY

TEACHER'S NOTES

Career Value Worksheet

____ Help Society: Do something to contribute to the betterment of the world.

____ Help Others: Be involved in helping other people in a direct way, either individually or in a small group.

____ Public Contact: Have a lot of day-to-day contact with people.

____ Work with Others: Have close working relationships with a group, work as a team toward common goals.

____ Friendships: Develop close personal relationships with people as a result of my work activities.

____ Competition: Engage in activities which put my abilities against others where there are clear win and lose outcomes.

____ Make Decisions: Have the power to decide courses of action, policies, etc.

____ Power and Authority: Control the work activities or (partially) the destinies of other people.

____ Influence People: Be in a position to change attitudes or opinions of other people.

____ Work Alone: Do projects by myself, without any significant amount of contact with others.

____ Knowledge: Engage myself in the pursuit of knowledge, truth, and understanding.

____ Intellectual Status: Be regarded as a person of high intellectual prowess or as one who is an acknowledged "expert" in a given field.

____ Creativity (general): Create new ideas, programs, organizational structures or anything else not following a format previously developed by others.

____ Supervision: Have a job in which I am directly responsible for the work done by others.

____ Change and Variety: Have work responsibilities which frequently change in their content and setting.

____ Stability: Have a work routine and job duties that are largely predictable and not likely to change over a long period of time.

____ Security: Be assured of keeping my job and a reasonable financial reward.

____ Fast Pace: Work in circumstances where there is a high pace of activity, work must be done rapidly.

____ Recognition: Be recognized for the quality of my work in some visible or public way.

____ Excitement: Experience a high degree of (or frequent) excitement in the course of my work.

____ Adventure: Have work duties which involve frequent risk-taking.

____ Profit, Gain: Have a strong likelihood of accumulating large amounts of money or other material gain.

____ Independence: Be able to determine the nature of my work without significant direction from others; not have to do what others tell me to.

____ Location: Find a place to live (town, geographical area) which is conducive to my life style and affords me the opportunity to do the things I enjoy most.

____ Time Freedom: Have work responsibilities which I can work at according to my own schedule; no specific working hours required.

SUBJECT(s)

Physical Educ.
Health

TYPE

CLASS TIME

110 Minutes

INSTRUCTIONAL OBJECTIVE

Students will learn about careers relating to recreation.

RESOURCES

S.C. State Parks Map.

Newspaper/ Magazines.

MATERIALS

S.C. State Parks Maps

RELATED CAREERS

Health Spa
Sports Store
Professional Athlete
Recreational Equipment-Rental and Sale
U.S. Park Service

NEW WORDS

Recreation
Site
Facilities

CAREER CLUSTER

Hospitality and Recreation

ACTIVITY

Define: Recreation - Site.

Ask children what is your favorite recreational activity.

What kind of equipment is used and who manufactures this?

Who provides the site for this activity?

Do weather conditions or seasons affect this activity - How?

What safety rules must you follow to participate in this activity?

Make a list of job titles of those who make this activity possible.

Pick three recreational jobs that you would like to have and find what education and physical qualifications are necessary.

FOLLOW-UP ACITIVITY

* Using the brochure and map, State Carolina State Parks, find the State Park closest to your school. What recreational facilities are offered?

TEACHER'S NOTES

SUBJECT(s)

Health

TYPE

Entire Class

CLASS TIME

INSTRUCTIONAL OBJECTIVE

Children will learn about emergencies, safety and related careers.

RESOURCES

O.O.H.

Red Cross-First Aid Book and Brochures.

Pyrotechnician Safety Board.

Yellow Pages of Telephone Book.

Resource #23 Emergency Preparedness.

MATERIALS

Paper, Rulers.

RELATED CAREERS

Weather Forecaster
Emergency Medical Technician
Safety Inspector
Pyrotechnics Safety
Building Inspector
Highway Safety
Safety Engineers
Life Guard
Manufactures of Safety Equipment and Devices
Insurance
Police
Seismologist

NEW WORDS

Accident
Disaster
Pyrotechnics
Emergency

CAREER CLUSTER

Environment

ACTIVITY

Define Safety.

a. On the chalk board, make 4 columns. Head columns - Bicycle, Swimming Pool, Home - Neighborhood and Car.

1. Under each column, write safety rules pertaining to the heading.

2. Under each column, list careers that pertain to keeping you safe.

Define Accident.

a. Make a list of accidents that could occur at school or home.

Define Disaster.

a. Make a list of Natural Disasters (Tornado-Earthquake-Volcanic Eruption-Hurricane-Ice Storm, etc.).

b. Simulate a possible local natural disaster. Explain why there are specific procedures that must be followed.

c. What other disasters are there (Airplane Crash-War-Explosions, Train)?

FOLLOW-UP ACTIVITY

* Have children draw a floor plan of their house. Pretend there is a fire in the kitchen and they are in their bedroom. Have them list what they would do first, second, etc.

* Teach the emergency number in their area - 911 etc.

* Invite someone representing one of the Related Careers to speak to the class.

TEACHER'S NOTES

SUBJECT(s)

Language Arts

TYPE

Entire Class

CLASS TIME

110 Minutes

INSTRUCTIONAL OBJECTIVE

Students will be able to identify careers related to construction.

RESOURCES

District Vocational/ Career Center.

File - "Construction of A House", S.C. State Dept. of Education, Audio Visual Library.

Other Materials: Charles Moore, Trade & Industry Columbia, S.C.

MATERIALS

Paper, Pencils, Blueprints-Vocational Center, Tools for Construction-Pictures, Magazines of Homes and Furnishings.

RELATED CAREERS

Architects
Bridge Builders
Highway & Road Construction
Sky Scraper Construction
Farm Building
Stables, Plumber, Painters, Electicians, Landscapers, Roofers, Cabinet Maker, Brickmason, Insulation A/C Heating, Estimators

NEW WORDS

Floor Plan, Skyscraper, Stable, Trowel, Ball Peen, Architect, Plumber, Brickmason, Electrician, Landscape

CAREER CLUSTER

Construction

ACTIVITY

Ask students "Who helps build a house?".

1. What is the name of the person who designs a house - Architect - Show Blueprints.

2. Who nails the boards together - Carpenter, etc.

Have each child draw a floor plan of their house.

Have each child draw a picture of the outside of their house plus any neighbors' houses or out buildings.

List all the workers' job titles that were responsible for the construction of your house. (Site Developer, Architect, Carpenter, Plumber, Electrician, Roofer, Brick Mason, Dry Wall Installer)

After a house is built, what workers provide the furnishings? (Furniture, Appliances, Decorations, Linens, Glasswear, China, Carpet/Rugs, Silverwear, etc.)

Make a book - My ideal house.

Cut out pictures of your future house and furnishings.

FOLLOW-UP ACTIVITY

* Have students from Vocational/Career Center, 2nd year Building Construction Class visit school to give a presentation on how to build a house.

* Visit Vocational/Career Center and see students building a house.

TEACHER'S NOTES

SUBJECT(s)

Art

TYPE

Individual

CLASS TIME

165 Minutes

INSTRUCTIONAL OBJECTIVE

Students will design and construct an aluminum sculpture.

RESOURCES

Yellow Pages of Telephone Book.

Vocational/Career Center Welding Class.

MATERIALS

Aluminum Foil (Heavy Weight), - cut into 2" Squares, Posterboard Paper Clips, Adhesives

RELATED CAREERS

Sheet Metals
Ironworkers
Metal Work Artists
Machinists
Welders
Jewelers

NEW WORDS

Aluminum
Sculpture
Ingot

ACTIVITY

A. Aluminum sheets are made from ingots which could weigh as much as 4,000 pounds.

   1. An ingot travels through a series of rollers which can greatly reduce its thickness.

B. Making an aluminum sculpture.

   1. Give each student 15 1" squares of aluminum foil (heavy thickness) and a 8½" x 11" piece of posterboard.

   2. Have each student create a sculpture using the posterboard as the framework and the aluminum foil as the covering.

      a. Other materials may be used to enhance the design.

         1) Pieces of wood
         2) Clay
         3) Craft Materials

FOLLOW-UP ACTIVITY

* Invite a metal work artist to class to demonstrate their work.
* Invite a welding student to class to show equipment and examples of their work.
* Have students investigate other metal working careers.

TEACHER'S NOTES

SUBJECT(s)

Language Arts

TYPE

Individual

CLASS TIME

110 Minutes

INSTRUCTIONAL OBJECTIVE

Students will identify job titles for careers in the military.

RESOURCES

South Carolina Occupational Information System (S.C.O.I.S.)

High School or Vocational Career Guidance Counselor.

1. SCOIS
2. Military Career Guide

MATERIALS

Military Index (Photocopy for each student)

RELATED CAREERS

See Military Index

NEW WORDS

ACTIVITY

The S.C.O.I.S. Military index contains an alphabetical listing of occupations for which training is available through the military services. All students contemplating entering the military must have received a high school diploma or a GED. One career is:

Coin Military #95 - Mapping Technicians

What they do:

Mapping Technicians in the military perform some or all of the following duties:

1. Draw maps and charts using drafting tools such as easels, templates, and compasses.
2. Understand and use survey measurements.
3. Draw land elevations, distances between points, and locations of landmarks on maps.
4. Build scale models of land areas out of wood, clay, and paper that show hills, lakes, road, and buildings.
5. Piece together aerial photographs of airfields, harbors, and other military sites to form large photomaps.
6. Draw maps of military sites using photographs taken from high altitude aircraft or satellites.
7. Record military troop and ship movements on maps or models for intelligence purposes.

The military uses maps to locate military targets and plot troop movements. It also uses maps to plan construction of airfields, roads, and docks. Mapping technicians make maps showing natural and man-made features such as hills, rivers, roads, and buildings.

Have the student pick 3 military training programs that interest them. Have the high school guidance counselor do a print-out of the programs most frequently indicated.

FOLLOW-UP ACTIVITY

* Invite a military person to make a presentation concerning their job.

TEACHER'S NOTES

MILITARY INDEX

OCCUPATION

1. Aerospace Engineers
2. Air Crew Members
3. Air Traffic Controllers
4. Aircraft Electricians
5. Aircraft Launch & Recovery Specialists
6. Aircraft Mechanics
7. Airplane Pilots
8. Artillery Crew Members
9. Automobile Mechanics
10. Automotive Body Repairers
11. Band Managers
12. Blasting Specialists
13. Boat Operators
14. Bricklayers & Concrete Masons
15. Building Electricians
16. Cargo Specialists
17. Carpenters
18. Combat Engineers
19. Computer Operators
20. Computer Programmers
21. Computer Systems Analysts
22. Construction Equipment Operators
23. Court Reporters
24. Dental Specialists
25. Detectives
26. Divers
27. Drafters
28. Electrical & Electronics Engineers
29. Electronic Instrument Repairers
30. Electronic Weapons Systems Repairers
31. Fire Fighters
32. Flight Operations Specialists
33. Food Service Specialists
34. Graphic Designers & Illustrators
35. Heating & Cooling Mechanics
36. Helicopter Pilots
37. Infantrymen
38. Intelligence Specialists
39. Legal Technicians
40. Machinists
41. Mapping Technicians
42. Medical Laboratory Technicians
43. Meteorologists
44. Military Police
45. Missile System Officers
46. Occupational Therapy Specialists
47. Oceanographers
48. Optometric Technicians
49. Ordnance Mechanics
50. Photographers

SUBJECT(s)

Science

TYPE

Class

CLASS TIME

One Period

INSTRUCTIONAL OBJECTIVE

Students will become aware of robots and their basic capabilities.

RESOURCES

Vocational/Career Center.

Local Manufacturing Company.

MATERIALS

Paper, Pencil
Worksheet.

RELATED CAREERS

Research Technican
Robotic Technician

NEW WORDS

Hazardous
Repetitive
Manipulate

CAREER CLUSTER

Manufacturing

ACTIVITY

A. Teacher will begin activity by telling children:

1. The origin of the word Robot.

   a. 1922 - A Czechoslovakian philosoper and playwright, Karl Capek, wrote a play "Rossums Universal Robot." The word "Robot" in his language (Czech) means worker or slave.

2. Jobs Robots are designed to do:

   a. Hazardous
   b. Repetitive

3. The major parts of a Robot are:

   a. Manipulator - Picks up things.
   b. Power Supply - Supplies energy to move manipulator.
   c. Controller - Controls power supply.

B. On a paper have student draw a "Robot" - Tell what is can do and identify on their drawing the following:

1. the manipulator

2. power supply

3. and controller.

FOLLOW-UP ACTIVITY

* Contact your vocational/career center to have a student bring a robot to class for a demonstration.

TEACHER'S NOTES

SUBJECT(s)

Language Arts

TYPE

Group

CLASS TIME

INSTRUCTIONAL OBJECTIVE

Student will explain what training is experienced in an apprenticeship program.

RESOURCES

Vocational/Career Center Guidance Counselor.

MATERIALS

RELATED CAREERS

Machinist
Welder
Firefighter
Electrician
Photography

NEW WORDS

Apprenticeship

ACTIVITY

An apprenticeship program is a formal training program that usually takes 3 to 4 years to complete with the majority of the time spent on the job.

Example:

Aircraft Mechanic

What is learned on the job:

Sheet Metal & Line Maintenance
Power Plant Assembly & Disassembly
Jet Engine Assembly & Disassembly
Electrical Trouble-Shooting & Repair
Engine Change & Heavy Maintenance
Brakes & Wheels
Propeller Assembly & Disassembly
Airframe Electrical
Turbine Engine Overhaul
Electrical Power Plant Overhaul
Landing Gear
Aircraft Electronics System Maintenance

What is learned in the classroom:

Welding
Mathematics
Blueprint Reading
Trade Theory
Safety Practices
Hydraulics & Pneumatics
Mechanical Assembly
Instrument Shop
Propeller Shop
Sheet Metal Shop
Upholsery Shop

Students enrolled in Apprenticeship type programs are paid a salary as they learn.

Contact the Vocational/Career Center Counselor for the names of apprenticeship programs in your area. Invite a student from one of these programs to visit the class and tell the students about the apprenticeship program.

FOLLOW-UP ACTIVITY

TEACHER'S NOTES

SUBJECT(s)

Math

TYPE

Group

CLASS TIME

110 Minutes

INSTRUCTIONAL OBJECTIVE

Students will prepare a graph representing the number of various business/industry establishments in their community.

RESOURCES

Telephone Book.

MATERIALS

Pens, Paper, Other Graph Material.

RELATED CAREERS

All

NEW WORDS

ACTIVITY

A. Divide the class into 7 groups. Provide each group with a telephone book.

1. Each group will count the number of businesses represented by the following categories:

   a. Construction Business
   b. Health Care
   c. Food Service
   d. Transporation Busines
   e. Manufacturing
   f. Law
   g. Communication

2. Using the results, make a large graph showing the number of businesses in each category.

   a. Use pictures, yarn and other materials.

3. Which category has the most number of businesses?

   Which category has the least number of businesses?

FOLLOW-UP ACTIVITY

* Invite a representative from one or more of these categories to speak to the class about their career.

SUBJECT(s)

Language Arts
Guidance

TYPE

Group

CLASS TIME

110 Minutes

INSTRUCTIONAL OBJECTIVE

Students will become aware of the skill and educational preparation required for entry level positions in a career.

RESOURCES

Dictionary of Occupational Titles (DOT).
South Carolina Occupational System
SCOIS - Most high schools and vocational centers have this computerized career information system - High School/Career Guidance Counselor, Military Career Index, College Catalogs, Technical School Catalog, Apprenticeship.

MATERIALS

Course Description Handbooks -
- High School
- Vocational/Career Center
- College
- Technical College

List of Apprenticeships
Military.

RELATED CAREERS

NEW WORDS

ACTIVITY

A. There are 6 training pathways one can take to prepare for a career.

1. High School/Vocational Courses
2. Technical Schools
3. Apprenticeship
4. College
5. Military
6. On-the-job training

B. Review the 15 career clusters and the various careers listed in each cluster.

1. Have students choose 4 careers that interest them.
2. Students will research careers using the Dictionary of Occupational Titles (D.O.T.) and S.C.O.I.S.

   a. What are the training pathways for entering these careers?

FOLLOW-UP ACTIVITY

* Using Vocational Center brochures, Technical and College catalogs, and Military Career Index, let students plan how they intend to prepare themselves for a career.

* If college is a requirement, have them estimate the cost of their education. (SCOIS)

  What are salaries for entry-level positions in this career (SCOIS)?

CAREER CLUSTERS

Agribusiness and Natural Resources

Dairy Farmer, Farm Equipment Mechanics, Agronomist, Veterinarians, Landscaping, Poultry Farmer, Horticulture, Food Scientist, Floraculture, Fruit Farmer, Rancher-(horse/cattle), Forester, Logger, Fishers, Fish/Game Warden, Geologist, Petrolium Engineer, Ranger, Fire Lookout.

Business and Office

Computer Operator-Programmer-Service-Systems Analysis, Office Equipment, Office Supplies, Secretary, Bookkeeping, Cashiers, Receptionist, File Clerk , Word Processing, Actuary, Accountant.

Communications and Media

Telephone, Newspaper, Television, Cable Installers, Magazines, Satellites, Broadcast Technician, Radio.

Construction

Contractors, Carpenters, Architects, Brick Masons, Drafters, Surveyors, Heavy Equipment Operator, Cabinet Maker, Crane Operator, Electricians, Plumbers, Floor Covering, Glaziers, Painters, Insulation Engineers, Air Cond./Heat, Ironworkers, Plasterers, Sheetmetal, Tilesetters, Ceramic Engineers.

Consumer and Homemaking

Modeling, Interior Decorator, Tailoring, Fashion Designer, Day Care Centers, Child Monitor, Dietician, Cooks/Chefs, Meat cutters
Cake Decorator, Kitchen Helper, Caterer.

Environmental

Air Polution Control, Biologist, Urban Planning, Meterologist, Surveyor, Sanitary Engineer,

Environmental cont.

Cartographer, Energy Conservation, Accoustical Engineer.

Fine Arts and Humanities

Artist, Performing Arts, Florist, Writers, Religous, Media Specialists, Piano Tuner, Organist, Display Worker, Interpreters, Poet, Ornamental Metal, Colorist, Jeweler.

Health

Medical Records, Cytologist, X-Ray Technician, Anestheseologist, Pharmacist, Perfusionist, Labratory Technology, Optometrist, Optician, Occulist, Surgical Technician, Podiatrist, Occupational Therapist, Biomedical Engineer, Speech Pathologist, Emergency Medical Technician, Respiratory Therapist, Psychologist, CAT Scan Technician, Hospital Administrator.

Public Services

School Personnel, Garbage Collector, Firemen, Governor, Mayor, Law Enforcement, City Manager, Corrections Officer, FBI, Guards, Military, ETV.

Transportation

Taxi Driver and Dispatcher, Truck Driver, Pilot, Ships Captain, Car Designer, Flight Attendants, Bus Drivers, Bicycles, Auto Repairers, Motorcycle Mechanic, Tire Manufacturer, Auto Parts Store, Air Traffic Controller, Railroad, Travel Agent, Track Workers, Shuttle Pilots, Parking Lot Attendants.

Marketing and Distribution

Sales, Advertising, Packaging, Market Research, Retail Store.

Hospitality and Recreation

Inn Keeper, Hotels/Motels, Recreation Leader, Resorts, Bowling Alleys, Stables, Recreation Equipment, Pro-Athlete, Guides, Grounds Keeper, Lifeguard, Race Car Driver, Jockey, Country Club Manager, Motorboat Mechanic.

Manufacturing

Tool Designer, Metallurgical Engineer, Industrial Engineer, Industrial Sewer, Robot Repair, Machinist, Instrument Maker, Machine Tools, Auto Assemblers, Boilermakers, Welders, Patent Attorney, Tool Grinder, Bucker, Sandblaster, Furniture, Loom Changer, Cloth Grader, Assembler, Glass Cutter, Laser Technologist, Robot Programmer.

Marine Science

Marine Biologist, Diver, Oceanographer, Research, Laboratory Technologist, Food Science, Exploration.

Personal Services

Waiter/Waitress, Undertaker, Private Household Workers, Cosmetologist and Barber, Pest Control, Dry Cleaners, Counselors, Sailor-Pleasure Craft, Detective, Real Estate Agent, Cosmetics, Shoe Repair, Spa Manager, Watch Repair, Banking, Lawyers, Kennel/Dog-Cat Grooming, Laundry, Paralegal Assistant, Social Worker, Mail Carriers.

SUBJECT(s)

Math

TYPE

Group

CLASS TIME

110 Minutes

INSTRUCTIONAL OBJECTIVE

The student will be able to:

*use math skills to build a model airplane
*describe characteristics of successful flights
*describe careers related to aeronautics.

RESOURCES

Film: "A Place of Dreams", #16074 S.C. Department of Audio Visual Library.

MATERIALS

Balsa Stick (1/8 x 1/4 x 12), Rulers, Construction Paper, Scissors, Rubber Cement, Balance Weight (Clay, etc.), Tape.

RELATED CAREERS

Navigator
Air Traffic Controller
Pilot
Aircraft Mechanic
Cabin Attendant
Aircraft Designer

CAREER CLUSTER

Transportation

ACTIVITY

Review fractions and emphasize the importance of math skills in building models according to specifications.

Construct a model airplane by following the instructions on the attached activity sheets.

Organize a contest for longest flight in air and best design. Have students change the weights on the plane and show how these changes affect the flight.

View film "A Place of Dreams" and discuss various careers in aerospace industry.

FOLLOW-UP ACTIVITY

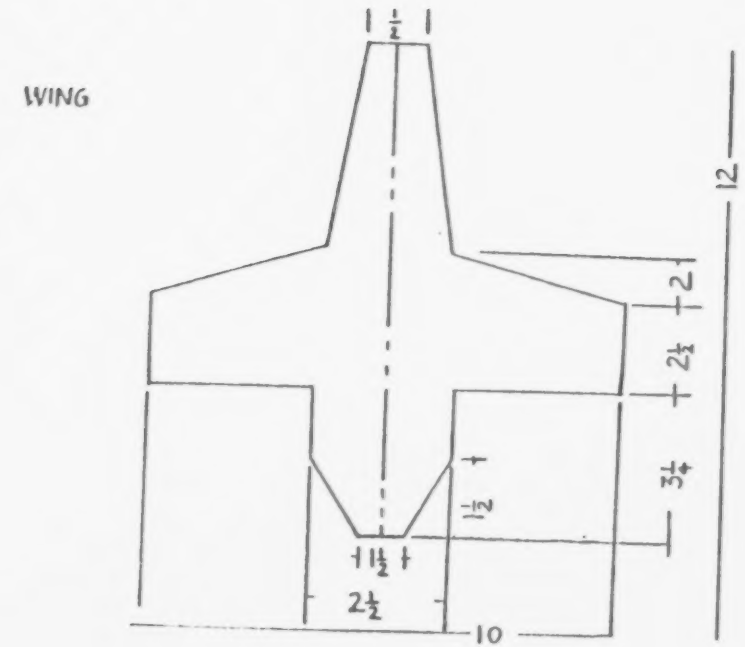
* Ask a person who is involved in a career in related to aviation to speak to the class.
* Tour a local airport - materials and visuals.
* Discuss with students various types of air travel (airplanes, jets, gliders, hot air balloon).

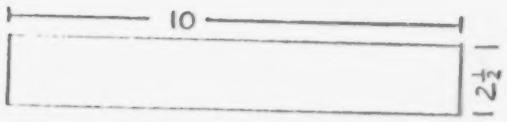
TEACHER'S NOTES

PROCEDURE FOR CONSTRUCTING MODEL PLANE

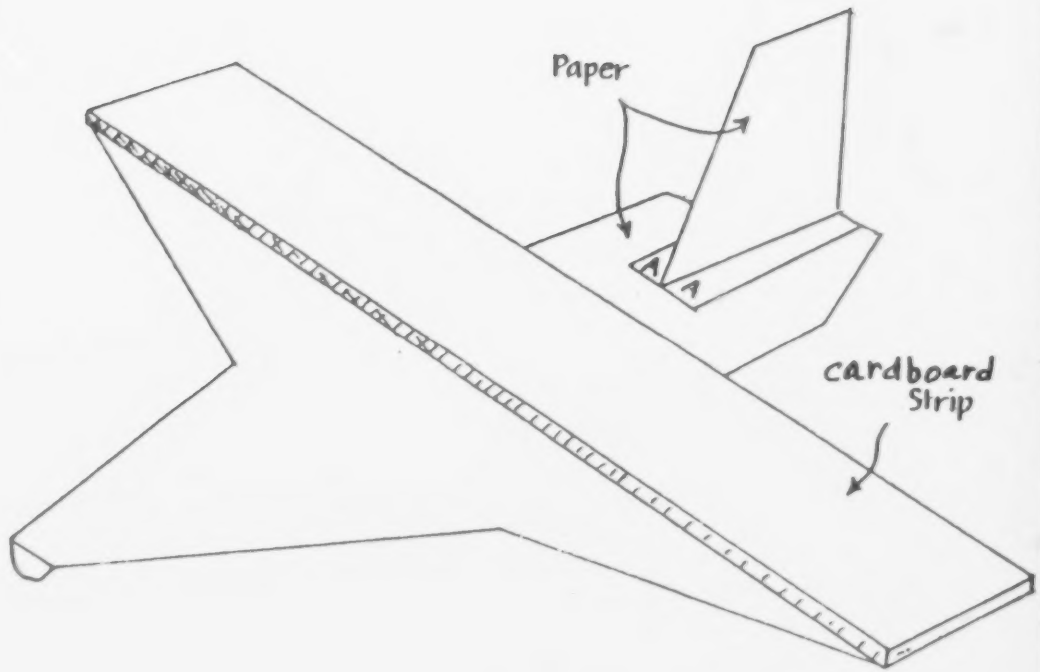
1. Layout pattern of plane onto heavy construction paper and cut out with scissors.
2. Cut out wing reinforcement out of cardboard (2½" x 10").
3. Layout tail section on construction paper and cut with scissors. Fold tail section in half on dotted line. Fold up ½ x 2½ inch tabs and glue to body of plane.
4. Glue stick to underside of body.
5. Small pieces of clay (or other weights) can be used to balance plane.
6. Students may want to decorate their individual models before flying.

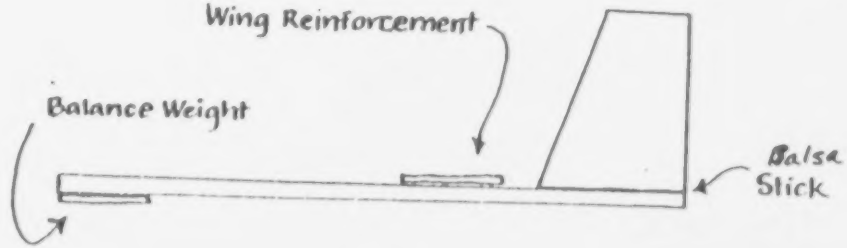
PROCEDURAL DRAWING: AIRCRAFT



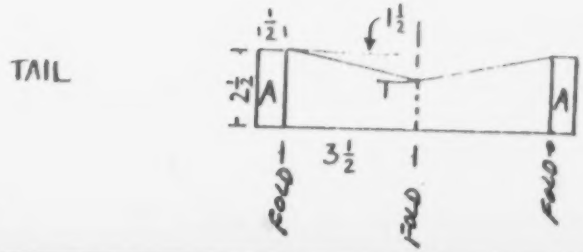


(Cardboard)
WING REINFORCEMENT





SIDE VIEW



SUBJECT(s)

Science
Math

TYPE

Entire Class

CLASS TIME

One Period

INSTRUCTIONAL OBJECTIVE

The student will be able to describe how math skills are used in meterology.

RESOURCES

MATERIALS

Thermometer, Paper, Pencil.

RELATED CAREERS

Pilot
Television Weatherman
Meterologist
Sea Captain
Farmer

NEW WORDS

Fahrenheit
Celsius
Barometer

ACTIVITY

Have students name people whose jobs are affected by weather conditions. (e.g. pilot, sea captain, farmer)

Explain how a meterologist, in predicting the weather, uses math skills.

Explain how to read a thermometer in Fahrenheit (F) or Celsius (C).

Have students complete worksheet measuring temperatures.

Another skill the meterologist uses is charting graphs. Have students plot a graph of temperatures reported in the daily newspaper. (Assign students different cities, domestic and foreign)

FOLLOW-UP ACTIVITY

* Visit a weather station and have students write a description of their visit.

* Invite a weatherman from a local television station to speak to the class.

TEACHER'S NOTES

Celsius (C) and Fahrenheit (F)

Water freezes	0^{o} C	32^{o} F
Body temperature	37^{o} C	98.6^{o} F
Water boils	100^{o} C	212^{o} F

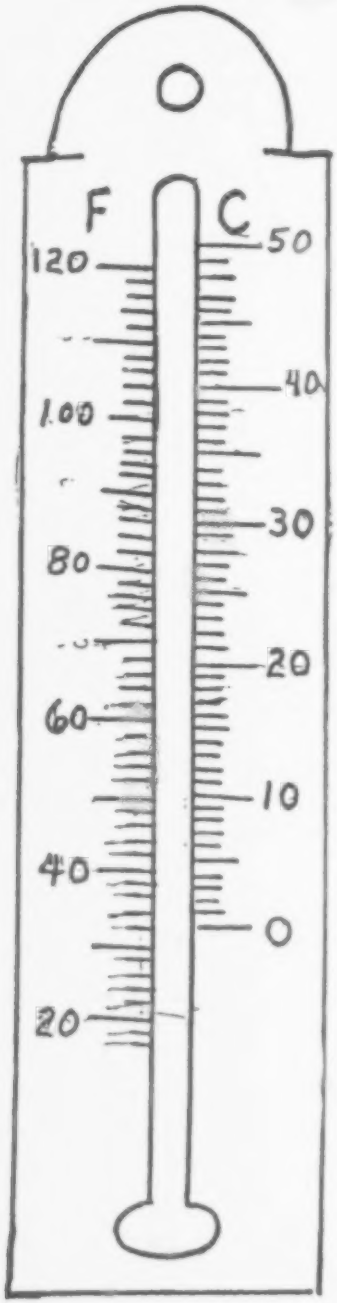
Look at the thermometer

1. Put a blue check ( ) where water freezes.

2. Put an (X) at your normal temperature.

3. If the temperature today is 95^{o} F, about what temperature is it in Celsius? _____

4. If the temperature was 30^{o} C, about what temperature is it in Fahrenheit? _____



SIXTH GRADE

SUBJECT(s)

Any Subject Area Deemed Appropriate

TYPE

Entire Class

CLASS TIME

One Period

INSTRUCTIONAL OBJECTIVE

Students will have an individual Career Development Record indicating changing career interest as personal growth in attitudes, interests, aptitudes and achievements.

RESOURCES

MATERIALS

Photo Copy: Career Development Record for each student.

RELATED CAREERS

NEW WORDS

ACTIVITY

The Career Development Record is a history of individual student career aspirations including their aptitudes, interests, attitudes and achievements.

Grade K will be the initial activity. The assessment, to be effective, should be continued in grades 2, 4, and 6.

The Career Development Record could be used by teachers and counselors to better understand the aspirations of their students K-12.

The teachers' judgement will be relied upon as to what time this assessment should be administered during the school year.

FOLLOW-UP ACTIVITY

TEACHER'S NOTES

CAREER DEVELOPMENT RECORD

_____ _____
Student's Name

GRADE 6 DATE:

High Interest Subject

_____

Low Interest Subject

_____

Prefers Activities:

Outside_____Inside_____Both_____

Physically:

Active_____Average_____Sedentary_____

Achievement(s)

_____

_____

Hobby/Interest(s)

_____

_____

Wants to be a: _____

*COPS: _____

Comment:

_____

_____

*Career Occupational Preference System

SUBJECT(s)

Language Arts

TYPE

Entire Class

CLASS TIME

110 Minutes

INSTRUCTIONAL OBJECTIVE

Students will broaden their awareness of career opportunities and education.

RESOURCES

Trade and Technical Careers & Training Handbook. (Free)

National Assn. of Trade and Technical Schools
2251 Wisconsin Avenue, N.W.
Washington, D.C. 20007
(202) 333-1021

MATERIALS

Trade and Technical Careers & Training Handbook. (Free)

RELATED CAREERS

All

NEW WORDS

Trade
Technical

ACTIVITY

Using the Trade and Technical Careers and Training Handbook, let each student pick three (or more) careers in which they are interested.

Have students fill out a information request form (Located in the middle of the the handbook).

a. Teacher needs to check these for accuracy. Please insert correct graduation date.

b. Teacher may want to use the school address. Technical schools are listed by State in the back half of the handbook.

Using the "Handbook", review "Career Questions and Answers" on page 76-77.

Using the "Handbook" and a vocational brochure from your vocational/career center and high school, plan what courses you would need to take to prepare for the careers that are interesting.

FOLLOW-UP ACTIVITY

* Have students take the Handbook home and have parents: a) choose careers that interest them; b) Choose career(s) that they would like their son/daughter to pursue.

* Using the Career Clusters Chart, have students find the cluster that best corresponds to their selected careers.

TEACHER'S NOTES

SUBJECT(s)

Language Arts

TYPE

Entire Class

CLASS TIME

Two Days

INSTRUCTIONAL OBJECTIVE

Students will organize and plan a tentative high school program based on a career interest.

RESOURCES

High School Curriculum Guide.

Vocational Center Brochure.

Guidance Counselors (Vocational-High School).

MATERIALS

High School Curriculum Guide-Vocational Center Brochure, Reference Sheet, Career Clusters, Worksheet, High School Plan.

RELATED CAREERS

NEW WORDS

CAREER CLUSTER

All

ACTIVITY

Review the 15 Career Clusters and related careers.

1. Ask students to select one or two career(s) that interest them.

   a. If they select a specific career area i.e., newspaper, have them be specific as to job title (Reporter, Typesetter, Proofreader, etc.).

Using the high school and vocational curriculum guides from your school district, have the students organize and plan a high school curriculum based upon their career interests.

FOLLOW-UP ACTIVITY

* Arrange for a student to work one afternoon or Saturday with a person who is employed in a career which interests the student.

* Invite persons from workplace to visit the class.

TEACHER'S NOTES

CAREER CLUSTERS

Agribusiness and Natural Resources

Dairy Farmer, Farm Equipment Mechanics, Agronomist, Veterinarians, Landscaping, Poultry Farmer, Horticulture, Food Scientist, Floraculture, Fruit Farmer, Rancher-(horse/cattle), Forester, Logger, Fishers, Fish/Game Warden, Geologist, Petrolium Engineer, Ranger, Fire Lookout.

Business and Office

Computer Operator-Programmer-Service-Systems Analysis, Office Equipment, Office Supplies, Secretary, Bookkeeping, Cashiers, Receptionist, File Clerk , Word Processing, Actuary, Accountant.

Communications and Media

Telephone, Newspaper, Television, Cable Installers, Magazines, Satellites, Broadcast Technician, Radio.

Construction

Contractors, Carpenters, Architects, Brick Masons, Drafters, Surveyors, Heavy Equipment Operator, Cabinet Maker, Crane Operator, Electricians, Plumbers, Floor Covering, Glaziers, Painters, Insulation Engineers, Air Cond./Heat, Ironworkers, Plasterers, Sheetmetal, Tilesetters, Ceramic Engineers.

Consumer and Homemaking

Modeling, Interior Decorator, Tailoring, Fashion Designer, Day Care Centers, Child Monitor, Dietician, Cooks/Chefs, Meat cutters
Cake Decorator, Kitchen Helper, Caterer.

Environmental

Air Polution Control, Biologist, Urban Planning, Meterologist, Surveyor, Sanitary Engineer,

Environmental cont.

Cartographer, Energy Conservation, Accoustical Engineer.

Fine Arts and Humanities

Artist, Performing Arts, Florist, Writers, Religous, Media Specialists, Piano Tuner, Organist, Display Worker, Interpreters, Poet, Ornamental Metal, Colorist, Jeweler.

Health

Medical Records, Cytologist, X-Ray Technician, Anestheseologist, Pharmacist, Perfusionist, Labratory Technology, Optometrist, Optician, Occulist, Surgical Technician, Podiatrist, Occupational Therapist, Biomedical Engineer, Speech Pathologist, Emergency Medical Technician, Respiratory Therapist, Psychologist, CAT Scan Technician, Hospital Administrator.

Public Services

School Personnel, Garbage Collector, Firemen, Governor, Mayor, Law Enforcement, City Manager, Corrections Officer, FBI, Guards, Military, ETV.

Transportation

Taxi Driver and Dispatcher, Truck Driver, Pilot, Ships Captain, Car Designer, Flight Attendants, Bus Drivers, Bicycles, Auto Repairers, Motorcycle Mechanic, Tire Manufacturer, Auto Parts Store, Air Traffic Controller, Railroad, Travel Agent, Track Workers, Shuttle Pilots, Parking Lot Attendants.

Marketing and Distribution

Sales, Advertising, Packaging, Market Research, Retail Store.

Hospitality and Recreation

Inn Keeper, Hotels/Motels, Recreation Leader, Resorts, Bowling Alleys, Stables, Recreation Equipment, Pro-Athlete, Guides, Grounds Keeper, Lifeguard, Race Car Driver, Jockey, Country Club Manager, Motorboat Mechanic.

Manufacturing

Tool Designer, Metallurgical Engineer, Industrial Engineer, Industrial Sewer, Robot Repair, Machinist, Instrument Maker, Machine Tools, Auto Assemblers, Boilermakers, Welders, Patent Attorney, Tool Grinder, Bucker, Sandblaster, Furniture, Loom Changer, Cloth Grader, Assembler, Glass Cutter, Laser Technologist, Robot Programmer.

Marine Science

Marine Biologist, Diver, Oceanographer, Research, Laboratory Technologist, Food Science, Exploration.

Personal Services

Waiter/Waitress, Undertaker, Private Household Workers, Cosmetologist and Barber, Pest Control, Dry Cleaners, Counselors, Sailor-Pleasure Craft, Detective, Real Estate Agent, Cosmetics, Shoe Repair, Spa Manager, Watch Repair, Banking, Lawyers, Kennel/Dog-Cat Grooming, Laundry, Paralegal Assistant, Social Worker, Mail Carriers.

HIGH SCHOOL PLAN

CAREER _____ NAME _____

Grade 9	Grade 10	Grade 11	Grade 12
Required Subjects	Required Subjects	Required Subjects	Required Subjects
Other Electives	Other Electives	Other Electives	Other Electives
Credits	Credits	Credits	Credits

Total Credits _____

1. List all required subjects.
2. List all electives.
3. Keep graduation credits in mind.
4. Extra-Curricular Activities:
   a.
   b.
   c.
   d.

SUBJECT

Social Studies

TYPE

Whole Class

CLASS TIME

INSTRUCTIONAL OBJECTIVE

The student will be able to describe the relationship between a geographical location and related careers.

RESOURCES

MATERIALS

Geographic maps (The U. S. and your state). Pictures of different geographic areas (desert, ocean, forest). Paper, Pencil, Crayons, Construction Paper.

RELATED CAREERS

Forestry
Irrigation
Fishing
Sports
Cartographer
Climatologist

CAREER CLUSTER

Environment

ACTIVITY

Teachers will initiate a discussion with the class by showing pictures of various geographical areas and describing the climate and other special features of these areas.

A U.S. map may be shown to describe areas of water, desert, and forest.

Students may be asked to draw a geographic map of the state illustrating various areas or may be given a map outline of S.C. as worksheet.

Discuss occupations specific to various geographical areas by asking students "What type of work would be more likely or popular in the area?"

FOLLOW-UP ACTIVITY

* Students may be divided into three groups to work on a mural showing occupations specific to three geographical areas.

* Worksheet can be developed wherein students may match pictures of an area to type of occupations.

TEACHER'S NOTES

SOUTH CAROLINA

197

198

SUBJECT(s)

Social Studies

TYPE

Whole Class

CLASS TIME

School Year

INSTRUCTIONAL OBJECTIVE

Student will be able to identify a different career each week and describe its importance in our society.

RESOURCES

MATERIALS

Paper, Pens, Pencils Crayons.

RELATED CAREERS

NEW WORDS

CAREER CLUSTER

All

ACTIVITY

Teacher will designate a particular area of a bulletin board to announce a career each week. Try to use each career cluster at least twice and select unusual careers.

Using magazines, books, and other materials, encourage students to find at least two facts about the career to add to the class list. Find pictures from magazines that relate to the career to put on the bulletin board.

Invite a speaker to tell about each career.

Develop a display for each career.

Advertise the career of the week by having students make badges, cut from manila folders, and decorated with a career motif.

TEACHER'S NOTES

* Students may be asked to write a composition on the career that is most important to them.

TEACHER'S NOTES

page 118

SUBJECT(s)

Science
Social Studies
Language Arts

TYPE

Group

CLASS TIME

55 Minutes

INSTRUCTIONAL OBJECTIVE

Student will be able to identify careers of the future created by new technologies.

RESOURCES

"Careers with a Future" Careers Tomorrow - The Outlook for Working in a Changing World. Cetron, Marvin and O'Toole, Thomas.

"Futurist" Magazine.

MATERIALS

Magazines, List of Future Careers.

RELATED CAREERS

Energy Technician
Housing Rehabilitation Technician
Hazardous Waste Management Technician
Industrial Laser Process Technician
Industrial Robot Production Technician
Material Utilization Technician

NEW WORDS

Nuclear
Solar
Laser
Technician
Utilization

CAREER CLUSTER

All

ACTIVITY

Discuss careers of the future that will be created by new energy sources (eg. nuclear power, solar energy, coal shale), and new technologies such as lasers and robotics.

Encourage students to compile a list of future occupations and the job requirements. (televisions, telephone, transportation, manufacturing).

Have each student describe his/her "ideal" job for the future.

FOLLOW-UP ACTIVITY

* Using magazines, students can create a collage of pictures related to an occupation that interest them the most.

TEACHER'S NOTES

SUBJECT(s)

History
Social Studies
Geography

TYPE

Individual
Small Groups

CLASS TIME

55 + Minutes

INSTRUCTIONAL OBJECTIVE

The student will research the construction methods and material of various geographical areas throughout the world and build a model using a variety of materials.

RESOURCES

House Building For Children
Walker, Les
Overlook Press
Woodstock, N.Y.
1977

Building - From Coves to Skyscrapers
Salvadori, Mario
Atheneum Press, 1979

MATERIALS

Cardboard, Clay, Popsicle Sticks, Balsa Wood, Glue.

RELATED CAREERS

Architect
Contractor
Plumber
Electrician
Brick Mason
Painter
Roofer
Surveyor
Carpenter

NEW WORDS

ACTIVITY

Students will research various geographical areas and the types of dwellings and materials used for construction in those areas.

Using various materials, balsa wood, clay, cardboard, grass, popsicle sticks, etc., construct models of dwellings to represent different areas and climates. Have students report on how model was constructed and why certain materials are used in particular climates.

FOLLOW-UP ACTIVITY

* Research history of construction used in different societies and construct models of those dwellings.
* Research various architectural styles throughout the world.
* Construct cardboard models of a student's "dream house."
* Visit a local construction site and discuss various jobs and skills required.
* Invite a speaker from one of the Related Careers to discuss with class various jobs skills.

TEACHER'S NOTES

SUBJECT(s)

Art

TYPE

Group

CLASS TIME

55 Minutes

INSTRUCTIONAL OBJECTIVES

The student will be able to identify careers related to the graphic communications field.

The student will produce a screen print using Riso Thermal Film.

RESOURCES

Riso Thermal Film
Walsh Products
Los Angeles, Calif.

Vocational/Career Center Graphic Communications Instructor.

MATERIALS

Thermal Film, Squeege, scissors, water soluble ink, T-shirts or paper, Thermo-fax copier, masking tape.

RELATED CAREERS

Screen Printer
Layout Artist
Card Designer

NEW WORDS

Thermal Film
Squeege

ACTIVITY

Students will create a design for screen printing T-shirts, greeting cards, posters, bumper stickers, etc. This design may be drawn or cut from magazines or newspapers and xeroxed. Place the design on top of the thermal film and run through a thermo-fax copier using a plastic carrier. (Heat is used to burn the image into the film.) Remove the film from the design and attach the film to a plastic frame using masking tape. Place the film and frame on top of the materials (paper, poster, T-shirt) to be printed. Spread a small amount of water soluble ink onto the film. Using a "squeege", force ink through the film. Remove materials from the frame and set aside to dry. Continue printing process for desired number of prints.

FOLLOW-UP ACTIVITY

- Form company to print and sell T-shirts to raise money.
- Design and print posters to promote class or school activity.
- Design and print greeting cards for special events or holidays.
- Invite a speaker from local screen printing firm, print shop or vocational center graphics program to speak on career in the printing industry.
- Visit a local print shop.
- Research history of printing as a means of communications - give a written or oral report to class.

TEACHER'S NOTES

SUBJECT(s)

Science
History
Math

CLASS TIME

55 Minutes

INSTRUCTIONAL OBJECTIVES

The student will be able to describe the effect of aerodynamics on the design and speed of vehicles.

The student will design and construct a vehicle.

RESOURCES

Video tape - Metric 500
Pitsco Co.
Pittsburg, Kansas

Transportation
Dale Seymour Publications
Palo, Alto, Ca. 1984

Middle/Junior H.S. Industrial Technology Education Instructor and Students.

MATERIALS

Paper, Pencil, Scissors
Cardboard, Colors,
Nails, Toothpicks, Glue.

RELATED CAREERS

Automobile Designer

NEW WORDS

Aerodynamics

ACTIVITY

Photocopy the Land Speed Record Assault Vehicles (LSRAV) worksheets.

Study the designs of the vehicles on the worksheet and discuss how aerodynamics effects the vehicles' speed. Invite a designer into the class to discuss his/her career and to bring blueprints of designs.

Provide students with paper and pencil and have them make a sketch of their idea. Using cardboard and/or poster board, construct the vehicles and decorate. Axles for the wheels can be small nails or toothpicks.

Depending on the extent of the activity, a competition can be held with awards for best design, best construction, speed, and distance down a ramp. Guidelines may also be developed to keep all designs within a specific size.

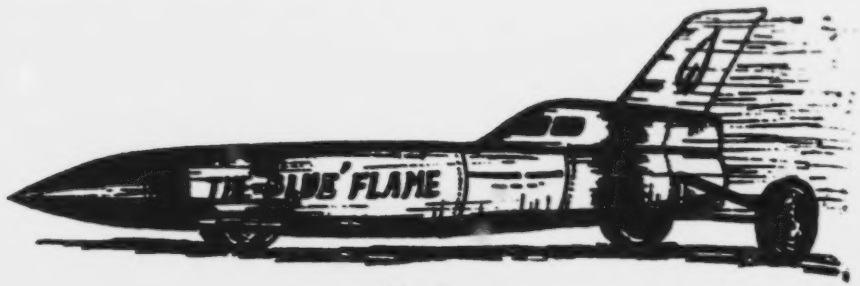
Discuss the advantages and disadvantages of various designs and construction methods of speed of vehicles.

FOLLOW-UP ACTIVITY

* Invite students from the local middle or junior high industrial technology education class to demonstrate their Metric 500 race cars.
* Use a map of the U.S.A. to find Utah and Bonneville Salt Flats.
* Study the relationships between the shape of sea animals (e.g. fish, dolphins) and the design of cars and airplanes.
* Research the various power sources used in the historical development of the LSRAV.

THE SPIRIT OF AMERICA

The Green Monster was the world's fastest land vehicle for only a week. On November 15, 1965, Craig Breedlove's car—shaped like a bottle and pinched in the middle to smooth out airflow—recaptured that honor. The power unit of Breedlove's Spirit of America-Sonic I was a turbojet. Breedlove put his four-wheel vehicle through its two timed runs on a rain-soaked course at Bonneville for an official average time of 600+mph. Breedlove had broken speed records before in a three-wheeled vehicle, but only the motorcycle racing organization (the FIM) gave him official credit for the earlier runs. The 1965 performance of "Sonic I" was an official Land Speed Record. See Fig. 5A-3.



Blue Flame

THE BLUE FLAME

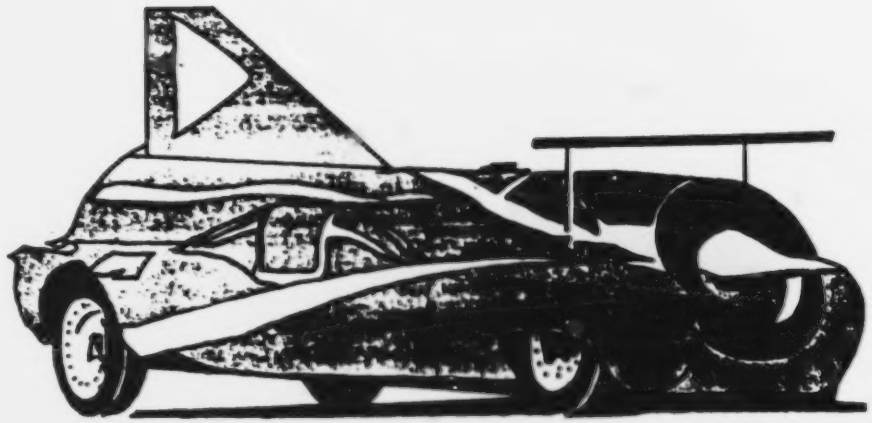
Breaking the 600+ speed of the Spirit of America was not an easy task. The above speed record remained on the books until the fall of 1970, when Gary Gabelich broke the land speed record with a two-way average speed of 622.40 mph at Bonneville, Utah. The four-wheel vehicle that Gabelich used to set a new record was powered by a liquid fuel rocket engine. In commenting about the new record, Gabelich explained that on both of his test runs the Blue Flame ran out of fuel about three quarters of the way through the measured mile and actually coasted through the finish. Gabelich plans to come back in 1971 and try and break the sound barrier at 720 mph. using the Blue Flame.

THE BLUE BIRD

A gas turbine engine was used to power all four wheels of Donald Campbell's record-breaking Blue Bird C.N.7, after nine years of trials, Campbell and the Blue Bird set a new speed record for automobiles of 403+mph., at Lake Eyre, Australia, July 17, 1964. At the time Campbell broke the record, no single official Land Speed Record was recognized by all the racing associations. Craig Breedlove had gone faster in a three-wheeled vehicle, but the old rules of the automobile racing organization (the FIA) admitted only four-wheeled cars. So Campbell held one record and Breedlove held another.

THE GREEN MONSTER

On November 7, 1965, Art Arfons went after a new official Land Speed Record. His Green Monster was powered by a turbojet engine with a four-stage afterburner and had four wheels. The track of the front wheels was 65"; the rear wheel track was 68". On the salt flats of Bonneville, Utah, the Green Monster finished the first of its two timed runs without serious trouble. Arfons was putting the vehicle through its official return run when he felt the right side of the Green Monster go down. A tire had blown. Smoke filled the cockpit, and he almost lost control of the car. But luck was with Arfons. The second timed mile was completed before the accident forced the wrenched and twisted vehicle to a stop. The Green Monster's average time for the two runs was 576+ mph, which gave Arfons the official Land Speed Record he was seeking. See Fig. 5A-2.



Art Arfons raises the world land speed record to 576.553 MPH in the jet-powered Green Monster in November, 1965, at Bonneville Salt Flats. The new record lasted only eight days.

SUBJECT(s)

Language Arts
Math

TYPE

Group

CLASS TIME

INSTRUCTIONAL OBJECTIVE

Students will develop an awareness of how manufacturing corporations are organized.

RESOURCES

Vocational/Career Center

The World of Manufacturing
McKnight & McKnight
Bloomington Ill.

MATERIALS

Photocopy - Line Organization Chart.

RELATED CAREERS

Managers
Painters
Electricians
Accounting
Public Relations
Law
Advertising

NEW WORDS

Corporation
Industry

ACTIVITY

A. Forming a corporation to manufacture a product
Corporation - A group of employers and employees in a basic industry.

1. Give each student a line organization chart.

a. Have each student indicate which Vice-President's job interests them most.

1) Have them relate the skills necessary for the workers they supervise.
2) Using the weekly salaries indicated, estimate:
a) monthly salary of each Vice President,
b) yearly salary.

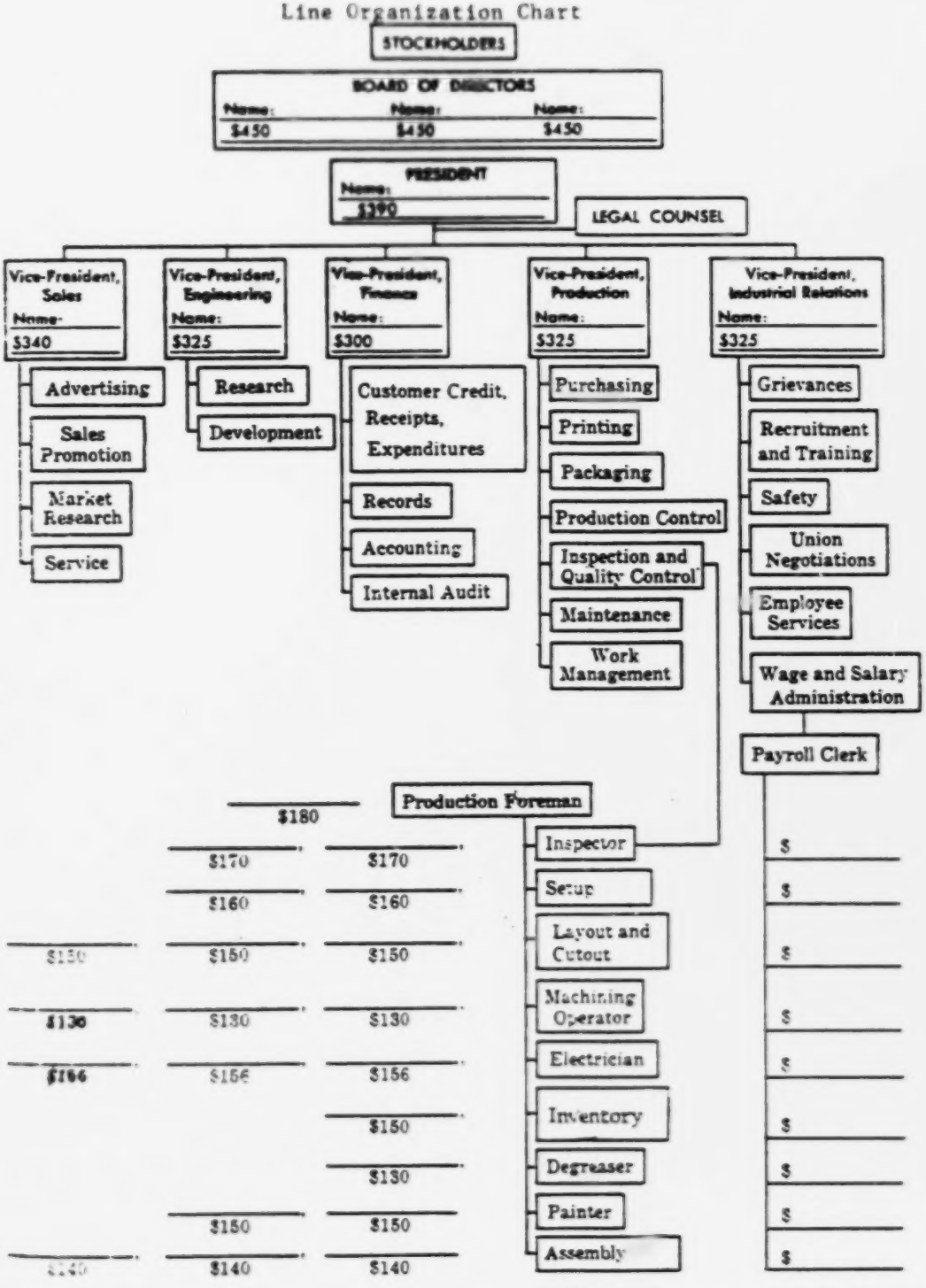
b. Using the job titles of workers supervised by the production foreman, have students choose a job that is interesting to them.

1) What skills are necessary?
2) What personal qualities would be desirable?
3) Using the salaries indicated, estimate how much money is spent each week for salaries and wages.

B. Applying for Positions in the Corporation

1. Have each student write a paragraph on why they think they are qualified for a particular position.

Line Organization Chart



Total Wages _____ of Production Workers

Total Salaries _____ of Executives

Total labor cost for *one week of operation* (salaries and wages) Total Salaries and Wages _____ (total payroll)

SUBJECT(s)

Math

TYPE

Individual
Small Groups

CLASS TIME

110 + Minutes

INSTRUCTIONAL OBJECTIVES

The student will be able to describe and explain the importance of geometric shapes in construction.

The student will construct a bridge using the geometric principles studied.

RESOURCES

Students, Structures, Spaces - Activities in the Built Environment
Erikson, Anse and Wintermute
Addison-Wesley, Menlo Park, Ca. 1983

MATERIALS

Paper, Pen, Pencil
Balsa Wood, Cardboard
Glue, X-Acto Knife

RELATED CAREERS

Civil Engineers
Construction Engineer
Boat Builder
Carpenter

NEW WORDS

Truss

ACTIVITY

Study the importance of geometric shapes in the construction of house trusses, bridges, boats, airplanes, etc. Invite an architect into the class to discuss with students various designs and materials used in construction.

Hand out pencils, paper, and rulers and have students design a bridge that will span a specific distance. The students can then construct the bridge either as individuals, as teams, or the whole class. Various materials such as cardboard balsa wood, popsicle sticks, etc., can be used. (The example activity sheet uses 1/8" x 1/4" balsa wood. However, balsa is rather expensive.) Emphasis should be placed on quality of construction, neatness, and design for strength. Awards may be given best design, construction, and for strongest bridge. Specific guidelines can be developed (e.g., using only glue to hold the pieces together) to make the construction of all bridges uniform.

FOLLOW-UP ACTIVITY

TEACHER'S NOTES

Bridge Construction Competition

The Bridge Construction Competition is designed as a problem solving activity to encourage creative thinking. The objective is to design and construct a bridge from limited materials using geometric patterns.

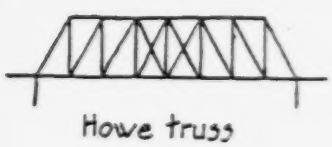
Divide the class into teams of 3-4 students per team. Each team will be given 4 pieces of 1/8" x 1/4" x 36" balsa wood. The finished bridge cannot weigh more than 16 grams (total weight of pieces of the balsa), must span 18 inches, consist of two sides, and have a space in the middle 1" x 2" for weight support. Materials such as cardboard, soda straws, ice cream sticks,tonque depressors, etc. may be used instead of balsa wood.

Only glue may be used to attach pieces together. Pins or tape may be used to hold the pieces together while drying, but must be removed before the competition. Careful planning prior to construction is essential to make most efficient use of materials and time.

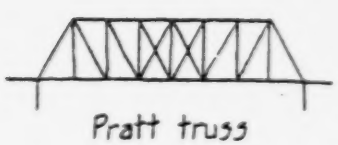
Each bridge will be evaluated on design, construction techniques, and strength.

This activity can be modified to meet the needs of each individual teacher, grade level, and student ability levels.

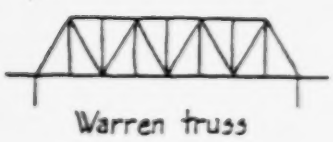
Following are a few suggested bridge designs and method of testing bridge.



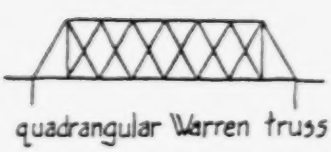
Howe truss



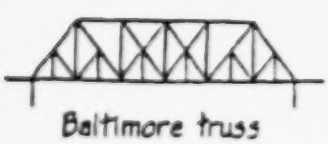
Pratt truss



Warren truss

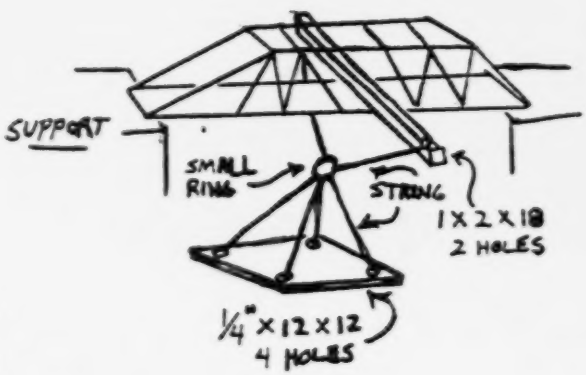


quadrangular Warren truss



Baltimore truss

camel back truss



SUBJECT(s)

Language Arts
Social Studies
History

TYPE

Entire Class

CLASS TIME

5-50 Minute
Class Periods

INSTRUCTIONAL OBJECTIVES

The student will be able to write a script and produce a video tape for use as classroom instruction, promotion, or entertainment.

The student will be able to describe job requirements related to this form of communication.

RESOURCES

Local Television Station
ETV
Communication
Dale Seymour Publications, Palo Alto, Ca.

MATERIALS

Video Tape Camera, Playback Unit, and Monitor, Props and Costumes.

RELATED CAREERS

Script Writer
Director
Producer
Audio Engineer
Lighting
Cameraman
Performers (Newscasters, Actors, Sports-announcers)

NEW WORDS

Video Tape
Editing
Story Board
Script

ACTIVITY

Using a story board, have students develop a script to produce a video tape. The final product may be developed for use as an instructional tape in the classroom, a commercial for a specific product, a promotional tape, news, or entertainment. Props and costumes can be made by the students to add realism. Students can choose jobs that interest them and research the requirements behind those jobs. Use a video tape camera from the school library, set up scene and lighting. Film production.

Edit film and add sound.

FOLLOW-UP ACTIVITY

- Visit a local television station to research the various jobs required to produce a television show.
- Invite a local television personality in to class to talk about careers involved with television.
- Research history of television and give written and oral report to class.

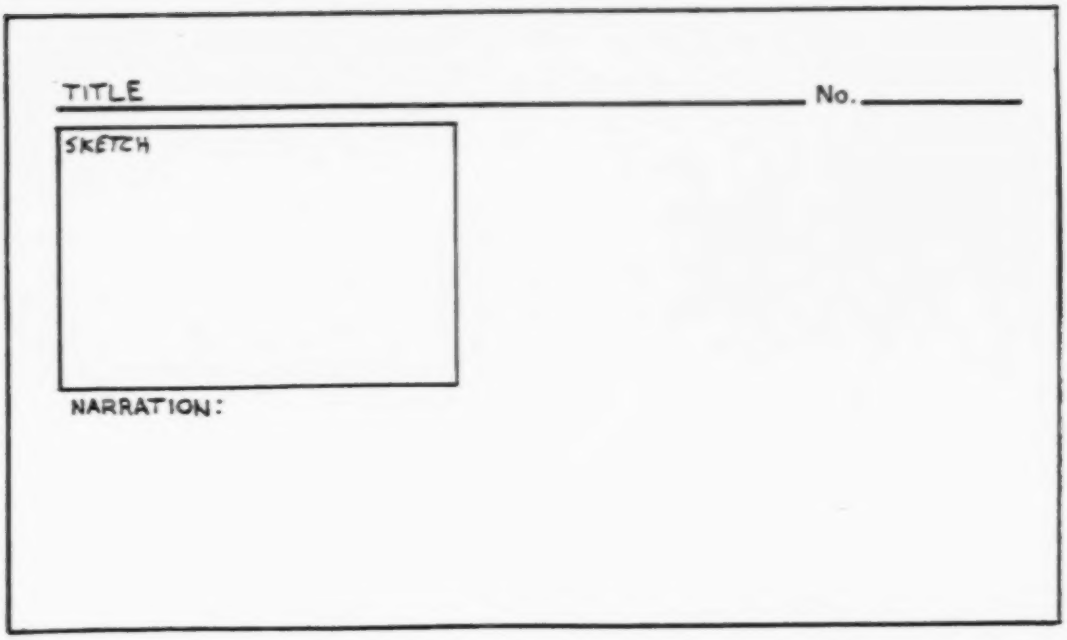
TEACHER'S NOTES

Making A Storyboard

A storyboard is used to develop a story to be used in producing a visual such as a video or slide-tape. In developing a story, try to visualize the situations you are describing. A good example would be the layout of a cartoon strip where each picture is a specific representation of part of a story.

Simple sketches or pictures are put on index cards or 8½ x 11 paper, leaving room for narration notes or production comments.

Using the sample storyboard card (that can be duplicated for use), index cards, or 8½ x 11 paper, put simple sketches or pictures in sequence, leaving room on the cards for narration or production comments. Each sequence is represented by one or more cards. Display the storyboard cards in sequence to evaluate the whole story and make any change that may be necessary. Use the storyboard to help develop the script for the production.



SUBJECT(s)

Language Arts

TYPE

Individual

CLASS TIME

Varied

INSTRUCTIONAL OBJECTIVE

The student will prepare a written or oral report based on research for a career in each of the four cluster areas related to industrial technology education.

RESOURCES

Technology In Your World
Hacker, M. and Barden, Robert
Delmar Publishers
Albany, N.Y. 1987

Telephone Directory.

MATERIALS

Magazines

RELATED CAREERS

All

NEW WORDS

ACTIVITY

Divide a bulletin board into four areas: Communications, Transportation, Power & Energy, and Construction. Have students collect pictures from magazines depicting careers in each area.

Invite students from the local middle school or junior high industrial technology education class to demonstrate an activity related to each of the areas.

Have students research a "favorite" career from each of the four areas and prepare a written or oral report.

FOLLOW-UP ACTIVITY

* Visit the local middle school industrial technology education laboratory for actual hands-on activities related to each of the four areas.

TEACHER'S NOTES

RESOURCES

RESOURCES

		Services
1.	Clemson Cooperative Extension Service (Address and telephone number will be found in the local telephone book)	Speakers Brochures Eggs
2.	Vocational/Career Cluster (Address and telephone will be found in the local school district directory or local telephone book)	Materials Demonstrations Tours
3.	Yellow/Blue Pages of the local telephone directory.	Information
4.	Southern Bell Telephone Company Public Relations Office, Columbia, South Carolina - (803) 252-2710	Materials Speakers
5.	South Carolina Division of State Parks, Edgar A. Brown Building, 1205 Pendleton Street, Columbia, South Carolina - (803) 737-1713	Brochures Maps
6.	Hugh McClimon, Supervisor, Agricultural Education, South Carolina State Department of Education, Columbia, South Carolina - (803) 734-8411	Brochures
7.	Dr. Susan Smith, Reading Consultant, South Carolina State Department of Education, Columbia, South Carolina - (803) 734-8378	Agriculture Resource Guide "Keepers of the Land"
9.	Reta Richardson, Chief Supervisor of Resource Development, South Carolina State Department of Education, Columbia, South Carolina - (803) 734-8092	ITV Program: "Picking Your Path"
10.	South Carolina Department of Wildlife and Marine Resources, P.O. Box 167, Columbia, South Carolina - (803) 734-3886	Brochures Speakers

		Resources
11.	Newberry County Poultry Farmers, Newberry, South Carolina	Brochures Speakers
12.	American Society of Radiologic Technologists, 645 N. Michigan Avenue, Chicago, Illinois 60611	Brochures
13.	Society of Nuclear Medical Technologists, 1201 Waukegan Road, Glenview, Illinois 60025	Brochures
14.	Space Colony: Frontier of the 21st Century, F.M. Bailey, NASA Publications Office, Code LFC-9, Washington, D.C. 20546	Brochures Pictures
15.	NASA - Langley Research Center, Hampton, Virginia 23665	Pictures Film: "Where Dreams Come True"
16.	South Carolina Employment Security Commission, Director, Labor Market Information, 1550 Gadsden Street, P.O. Box 995, Columbia, South Carolina	Books
17.	Museum Commission of South Carolina, Margaret Lane, Director of Education, South Carolina State Museum, P.O. Box 100107, Columbia, South Carolina - (803) 734-9020	Tours, Materials, Speakers
18.	Discovery Place, Beverly Sanford, 301 N. Tryon Street, Charlotte, North Carolina 28202 - (704) 372-6262	Tours, Materials
19.	South Carolina State Department of Education, Audio Visual Library, 1513 Gervais Street, Columbia, South Carolina 29201	Films: "A Place of Dreams" #16074 "The Universal Vehicle" #1561 "Construction of A House"
20.	Charles Moore, Supervisor, Trade and Industry, South Carolina State Department of Education, Columbia, South Carolina - (803) 737-2745	Brochures
21.	Local Red Cross	First Aid Books
22.	Pyrotechnician Safety Board, W.V. Procel Director, Columbia, South Carolina (803) 737-2388	Brochures

		Resources
23.	Emergency Preparedness, Paul Lunsford, Rutledge Building, Columbia, South Carolina - (803) 734-8020	Brochures
24.	Ninety-Six National Historical Site, (Revoluntionary War), Ninety-Six, South Carolina 29666 - (803) 543-2900	Tours, Speakers, Brochures

Books

1. The Man Who Took The Indoors Out, Arnold Lobel, Harper & Row Publishing, New York, 1974.
2. Emerging Careers - New Careers For The Year 2000 and Beyond, Finegold and Metler, Garrett Park Press, Maryland, 1983.
3. Profiles of The Future, Arthur Clarke, 1984.
4. ABC's of Space, Isaac Isimov, Walker and Company, New York, 1969.
5. Dictionary of Occupational Titles (D.O.T.)
   Superintendent of Document, U.S. Government Printing Office, Washington, D.C. 20402.
6. Children's Dictionary of Occupations
   Paperbacks for Educators, 1240 Ridge Road, Ballwin, Missouri 63021
   (1-800-227-2591) - $9.95

Handbooks

1. Trade & Industrial Careers and Training
   National Association of Trade and Technical Schools
   2251 Wisconsin Avenue, N.W., Washington, D.C. 20007
   FREE - 80 Pg. Handbook with information on careers and tells where training may be obtained
   (No limit on number ordered.)